



# TOLL BRIDGE PROGRAM OVERSIGHT COMMITTEE MEETING MATERIALS

December 9, 2010

CALTRANS

BAY AREA TOLL AUTHORITY

CALIFORNIA TRANSPORTATION COMMISSION





## *Letter of Transmittal*

**TO:** Toll Bridge Program Oversight Committee  
(TBPOC)

**DATE:** December 1, 2010

**FR:** Program Management Team (PMT)

**RE:** TBPOC Meeting Materials Packet – December 9, 2010

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Herewith is the TBPOC Meeting Materials Packet for the December 9<sup>th</sup> meeting. The packet includes memoranda and reports that will be presented at the meeting. A Table of Contents is provided following the Agenda to help locate specific topics.

**TBPOC MEETING**  
**December 9, 2010, 10:00am – 1:00pm**  
**Caltrans HQ, Director's Conference Room, 1120 N Street, Sacramento, CA**  
**TBPOC - PMT pre-briefing, 10:00am – 11:00am**  
**TBPOC meeting, 11:00am – 1:00pm**

<b>Topic</b>	<b>Presenter</b>	<b>Time</b>	<b>Desired Outcome</b>
<b>1. CHAIR'S REPORT</b>	S. Heminger, BATA	5 min	Information
<b>2. TBPOC/ ABF Discussion</b> a. Self-Anchored Suspension (SAS) Superstructure Mitigation and Acceleration Update	PMT	30 min	Information
<b>3. CONSENT CALENDAR</b> a. TBPOC Meeting Minutes: 1) November 9, 2010 Meeting Minutes*	A. Fremier, BATA	1 min	Approval
b. Draft Project Progress and Financial Update November 2010**	A. Fremier, BATA	1 min	Approval
c. Yerba Buena Island Transition Structures No. 1 Contract Change Order No. 33-SO (Modular Seismic Joints)*	D. Noel, CTC	3 min	Approval
<b>4. SAN FRANCISCO-OAKLAND BAY BRIDGE UPDATES</b> a. Yerba Buena Island Transition Structures No. 1 1) Update	T. Anziano, CT	5 min	Information
b. Oakland Touchdown No. 2 1) Detour and Staging Concept Update***	B. Maroney, CT	30 min	Information
c. Bicycle-Pedestrian Access to Yerba Buena Island*	B. Maroney, CT/ S. Hulsebus, CT	15 min	Information
<b>5. ANTIOCH/ DUMBARTON BRIDGE SEISMIC RETROFIT UPDATES</b> a. Updates*	M. Forner, CT	10 min	Information
b. Antioch Bridge Contract Change Order No. 6 (Bearings and Restrainers)*	M. Forner, CT	10 min	Approval
<b>6. OTHER BUSINESS</b>			
<b>Next TBPOC Meeting: January 6, 2011, 10:00 AM – 1:00 PM</b> <b>Mission Bay Office, Oakland, CA</b>			

\* Attachments

\*\* Stand-alone document included in the binder

\*\*\* To be sent under separate cover

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### **TBPOC MEETING December 9, 2010**

<b>INDEX TAB</b>	<b>AGENDA ITEM</b>	<b>DESCRIPTION</b>
<b>1</b>	<b>1</b>	<b>CHAIR'S REPORT</b>
<b>2</b>	<b>2</b>	<b>TBPOC/ABF/TYLMN DISCUSSION</b> a. Self-Anchored Suspension (SAS) Superstructure Mitigation and Acceleration Update
<b>3</b>	<b>3</b>	<b>CONSENT CALENDAR</b> a. TBPOC Meeting Minutes 1) November 9, 2010 Meeting Minutes*  b. Draft Project Progress and Financial Update November 2010**  c. Yerba Buena Island Transition Structures No. 1 Contract Change Order No. 33-S0 (Modular Seismic Joints)*
<b>4</b>	<b>4</b>	<b>SAN FRANCISCO-OAKLAND BAY BRIDGE UPDATES</b> a. Yerba Buena Island Transition Structures (YBITS) No. 1 1) Update  b. Oakland Touchdown No. 2 1) Detour Staging and Concept Update***  c. Bicycle-Pedestrian Access to Yerba Buena Island*
<b>5</b>	<b>5</b>	<b>ANTIOCH/ DUMBARTON BRIDGE SEISMIC RETROFIT UPDATES</b> a. Updates*  b. Antioch Bridge Contract Change Order No. 6 (Bearings and Restrainers)*
<b>6</b>	<b>6</b>	<b>OTHER BUSINESS</b>

\* Attachments

\*\* Stand-alone document included in the binder

\*\*\* To be sent under separate cover

## **ITEM 1: CHAIR'S REPORT**

No Attachments

## *Memorandum*

**TO:** Toll Bridge Program Oversight Committee (TBPOC)      **DATE:** December 1, 2010

**FR:** Tony Anziano, Toll Bridge Program Manager, Caltrans

**RE:** Agenda No. - 2a

TBPOC/ ABF/ TYLMN Discussion

Item- Self-Anchored Suspension (SAS) Superstructure Mitigation and  
Acceleration Update

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**Recommendation:**

For Information Only

**Cost:**

N/A

**Schedule Impacts:**

N/A

**Discussion:**

A verbal update on the SAS contract will be provided at the December 9<sup>th</sup> meeting.

**Attachment(s):**

N/A

## *Memorandum*

**TO:** Toll Bridge Program Oversight Committee (TBPOC)      **DATE:** December 1, 2010

**FR:** Andrew Fremier, Deputy Executive Director, BATA

**RE:** Agenda No. - 3a1  
Consent Calendar  
Item- TBPOC Meeting Minutes  
November 9, 2010 Meeting Minutes

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**Recommendation:**

**APPROVAL**

**Cost:**

N/A

**Schedule Impacts:**

N/A

**Discussion:**

The Program Management Team has reviewed and requests TBPOC approval of the November 9, 2010 Meeting Minutes.

**Attachment(s):**

November 9, 2010 Meeting Minutes



# TOLL BRIDGE PROGRAM OVERSIGHT COMMITTEE

CALTRANS BAY AREA TOLL AUTHORITY CALIFORNIA TRANSPORTATION COMMISSION

## MEETING MINUTES

November 9, 2010, 10:00am – 1:00pm  
Mission Bay Office, 325 Burma Road, Oakland, CA  
TBPOC – PMT pre-briefing, 10:00am – 11:00am  
TBPOC meeting, 11:00am – 1:00pm

**Attendees:** TBPOC Members: Steve Heminger, Bimla Rhinehart, and Cindy McKim  
PMT Members: Tony Anziano, Andrew Fremier, and Stephen Maller  
Participants: Ade Akinsanya, Brian Boal, Michele DiFrancia, Rich Foley, Mike Forner, Ted Hall, Steven Hulsebus, Beatriz Lacson, Peter Lee, Brian Maroney, Rick Morrow, Dina Noel, Mark Shindler, Pete Siegenthaler, Jon Tapping and Jason Weinstein  
Part-time (ABF): Brian Petersen, Bob Kick, Lisa MacDonald and Peter Vander Waart

Convened: 11:16 AM

Items		Action
<b>1. CHAIR'S REPORT</b> <ul style="list-style-type: none"><li>S. Heminger, the Chair, reported on his recent visit to the ZPMC facility in China, accompanied by A. Fremier and T. Anziano.<ul style="list-style-type: none"><li>There was a significant forward momentum observed in the activity in China.</li><li>ZPMC's CEO, Mr. Kang, expressed their commitment to meeting the July 2011 shipment of Lifts 13 and 14.</li></ul></li></ul>		
<b>2. TBPOC/ABF/ TYLMN Discussion</b> <ul style="list-style-type: none"><li>a. Self-Anchored Suspension (SAS) Superstructure Mitigation and Acceleration Update<ul style="list-style-type: none"><li>T. Anziano reported that the significant progress they saw in China is the result of the best team effort achieved to date. He noted that the speed with which the OBG barrier rail work is moving is an</li></ul></li></ul>		

**(continued)**

Items	Action
<p>indication of how fast the work is proceeding.</p> <ul style="list-style-type: none"><li>○ The OBG 10 and Tower Lift 3 shipment is leaving tomorrow.</li><li>○ Post-CCO 160, a new, forward-looking schedule has been developed by ABF. B. Petersen gave a “Summary Level Overview” of the Contract Milestone Dates/Projected Completion, Major Fabrication Items/Projected Shipping Date, Major Construction Items/Projected Date, What Work Remains after SSO Completion, Assumptions and Qualifications, and a schedule of Critical Path Activity. Major milestones and projected dates included:<ul style="list-style-type: none"><li>➤ Tower erection completion (including saddle) - June 8, 2011;</li><li>➤ Lifts 13 &amp; 14 shipment - July 11, 2011;</li><li>➤ Crossbeam 19 complete erection - December 30, 2011;</li><li>➤ Opening of east and westbound lanes (Phase 2 SSO completion date) - August 28, 2013; after SSO, no work above deck is scheduled or assumed to be performed;</li><li>➤ Phase 3 completion date - February 12, 2014; and</li><li>➤ New contract completion date – August 24, 2014.</li></ul></li><li>○ B. Petersen emphasized that while milestones are expected to shift, commitments will remain the same; and, the aggressive approach to schedule will not compromise quality. He asked for the TBPOC’s support of the schedule and the timely resolution of issues.</li><li>○ The consensus was to discuss the increase in the number of work shifts after the July 11, 2011 shipment of Lifts 13 &amp; 14 has</li></ul>	

(continued)

Items	Action
<p>happened.</p> <ul style="list-style-type: none"> <li>○ B. Petersen expressed appreciation for the TBPOC jobsite visits and encouraged more of them in the future.</li> </ul>	
<p><b>3. CONSENT CALENDAR</b></p> <p>a. TBPOC Meeting Minutes</p> <p>1) October 7, 2010 Meeting Minutes</p>	<ul style="list-style-type: none"> <li>• The TBPOC <b>APPROVED</b> the Consent Calendar, as presented.</li> </ul>
<p><b>4. PROGRESS REPORTS</b></p> <p>a. Draft Third Quarter 2010 Project Progress and Financial Update</p> <ul style="list-style-type: none"> <li>• P. Lee presented, for TBPOC approval, the final draft Third Quarter 2010 Project Progress and Financial Update.</li> <li>○ The final report, which is scheduled for distribution to BATA tomorrow, will reflect current costs and forecasts.</li> <li>○ Revisions on page 7, column i (Current TBPOC Approved Completion Schedule), were pointed out for the SAS Superstructure, Westbound Open and Eastbound Open.</li> <li>○ The 4<sup>th</sup> quarter report will reflect the new SSO projected completion of August 28, 2013 (east and westbound lanes open) as presented in item 2a above.</li> </ul> <p>b. TBSRP 3rd Quarter 2010 Risk Management Update</p> <ul style="list-style-type: none"> <li>• J. Tapping presented, for TBPOC information, the “Risk Management Briefing 3rd Quarter 2010” which covered Q3 2010 Adequacy of Reserves, Good News: CCO160, and Look Ahead to Q4 2010. Highlights included:</li> <li>○ The Program Contingency balance sufficiently covers the cost of currently identified risks.</li> </ul>	<ul style="list-style-type: none"> <li>• The TBPOC <b>APPROVED</b> the Third Quarter 2010 Project Progress and Financial Update with the following revisions on page 7: <ul style="list-style-type: none"> <li>○ Change column i (Current TBPOC Approved Completion Schedule) for the SAS Superstructure to Aug 2014, and for Westbound Open and Eastbound Open to Dec 2013.</li> </ul> </li> </ul>

(continued)

Items	Action
<ul style="list-style-type: none"><li>○ CCO 160 has resulted in reduced risks as well as reduced uncertainty. It demonstrated the transparency of the risk management process, validated the Risk Teams' effectiveness, and improved collaboration between the Project Team and Contractor.</li><li>○ A range of costs and associated risks for the Temporary OTD No. 2 Detour will be reflected in the 4<sup>th</sup> quarter risk management results.</li></ul>	
<p><b>5. PROGRAM ISSUES</b></p> <p>a. West Approach Right-of-Way Update</p> <ul style="list-style-type: none"><li>• M. Shindler reported on the status of the parcels (two vacant properties and four live/work lofts) purchased by the State for the West Approach Project, not one of which has been sold to date.</li><li>○ It was suggested that in order to test the market, a broker/agent participation of 2% of the selling price (payable by BATA) might increase the probability of success in selling (by auction) the least desirable unit (T253) and receiving the best price.</li></ul> <p>b. West Approach Landscaping and Lighting Contract Award and Allocation</p> <ul style="list-style-type: none"><li>• P. Lee presented, for TBPOC approval, a request to allocate \$4 million from the West Approach project budget and award a contract to construct lighting and landscaping improvements to areas impacted by the project.</li><li>○ BATA to take action on the allocation request on November 10, 2010.</li></ul>	<ul style="list-style-type: none"><li>• Although presented as an informational item, the TBPOC voted to <b>APPROVE</b> a broker/agent participation in the sale of the lofts, as discussed.</li><li>• The TBPOC <b>APPROVED</b> the allocation and award of a landscaping and lighting contract for \$4 million, as presented.</li></ul>
<p><b>6. SAN FRANCISCO-OAKLAND BAY BRIDGE (SFOBB) UPDATES</b></p> <p>a. Yerba Buena Island (YBI) Detour</p>	

(continued)

Items	Action
<p>1) Update</p> <ul style="list-style-type: none"> <li>T. Anziano reported that the job is completed and has been accepted. YBI Detour contractor, CCM, has demobilized and the area has been turned over to the YBITS No. 1 contractor.</li> </ul> <p>b. Yerba Buena Island Transition Structures (YBITS) No. 1</p> <p>1) Update</p> <ul style="list-style-type: none"> <li>T. Anziano reported that the YBITS No. 1 contractor, MCM, has started work on the new approach structures.</li> </ul> <p>c. Oakland Touchdown (OTD) No. 2</p> <p>1) Temporary OTD Detour Alignment and Bicycle/Pedestrian Access</p> <ul style="list-style-type: none"> <li>B. Maroney requested TBPOC approval for the following items, both of which have been reviewed and recommended by the PMT: <ul style="list-style-type: none"> <li>a) a bicycle/pedestrian facility on the westbound Temporary OTD Detour (TOTDD) and across to the OTD-Skyway bicycle/pedestrian facility; and</li> <li>b) Alignment #9 for the TOTDD.</li> </ul> </li> <li>It was pointed out that item a above will be incorporated into the TOTDD work, which will be issued as a CCO to MCM, and that the OTD No. 2 contract will be put out to bid.</li> </ul>	<ul style="list-style-type: none"> <li>The TBPOC <b>APPROVED</b> items a and b, as presented, and tasked the PMT to do the following by the TBPOC December 9 meeting: <ul style="list-style-type: none"> <li>Present cost estimates (capital and support) for items a and b;</li> <li>Develop a conceptual proposal for a detour bicycle/pedestrian access onto the Yerba Buena Island concurrent with the bridge's SSO (provide more detail at the TBPOC January 6, 2011 meeting); and</li> <li>Present a proposal on how to release information about the detour and bicycle/pedestrian facility to the public.</li> </ul> </li> </ul>
<p><b>7 DUMBARTON/ANTIOCH BRIDGE SEISMIC RETROFIT UPDATES</b></p> <ul style="list-style-type: none"> <li>J. Weinstein provided updates, for TBPOC information, on the Antioch and</li> </ul>	

**(continued)**

Items	Action
<p>Dumbarton Bridge Seismic Retrofit projects.</p> <ul style="list-style-type: none"><li>○ <u>Antioch Bridge</u>: There is a potential CCO for approximately \$1 million to resolve a welding issue. Quality control tests on isolation bearings were performed successfully. The first isolation bearings will be installed next week.</li><li>○ <u>Dumbarton Bridge</u>: Field work has commenced.</li></ul>	
<p><b>8 OTHER BUSINESS</b></p> <ul style="list-style-type: none"><li>• The next TBPOC meeting is scheduled for December 9, 2010, 10:00 AM – 1:00 PM, in Sacramento.</li><li>• The meeting was adjourned in memory of Mr. Bernard Weinstein (father of Jason Weinstein).</li></ul>	

Adjourned: 12:12 PM

**TBPOC MEETING MINUTES**  
November 9, 2010, 10:00am – 1:00pm

**APPROVED BY:**

\_\_\_\_\_  
**STEVE HEMINGER**, TBPOC Chair  
Executive Director, Bay Area Toll Authority

\_\_\_\_\_  
Date

\_\_\_\_\_  
**BIMLA G. RHINEHART**, TBPOC Vice-Chair  
Executive Director, California Transportation Commission

\_\_\_\_\_  
Date

\_\_\_\_\_  
**CINDY McKIM**  
Director, California Department of Transportation

\_\_\_\_\_  
Date

## *Memorandum*

**TO:** Toll Bridge Program Oversight Committee (TBPOC)      **DATE:** December 1, 2010

**FR:** Andrew Fremier, Deputy Director, BATA

**RE:** Agenda No. - 3b  
Consent Calendar  
Item- Draft Project Progress and Financial Update November 2010

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**Recommendation:**

For Information Only/ Approval Confirmation

**Cost:**

N/A

**Schedule Impacts:**

N/A

**Discussion:**

Included in this package, for TBPOC information, is a draft Project Progress and Financial Update November 2010. By meeting time, the report will have been reviewed and approved by the PMT through TBPOC-delegated authority, and released on December 3, 2010. TBPOC confirmation of this approval is requested.

**Attachment(s):**

Draft Project Progress and Financial Update November 2010 (see end of binder)

# San Francisco Bay Area Toll Bridge Seismic Retrofit and Regional Measure 1 Programs

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## Project Progress and Financial Update November 2010

### Draft Version 4.0



**TOLL BRIDGE PROGRAM  
OVERSIGHT COMMITTEE**

CALTRANS BAY AREA TOLL AUTHORITY CALIFORNIA TRANSPORTATION COMMISSION

**Released:** December 2010





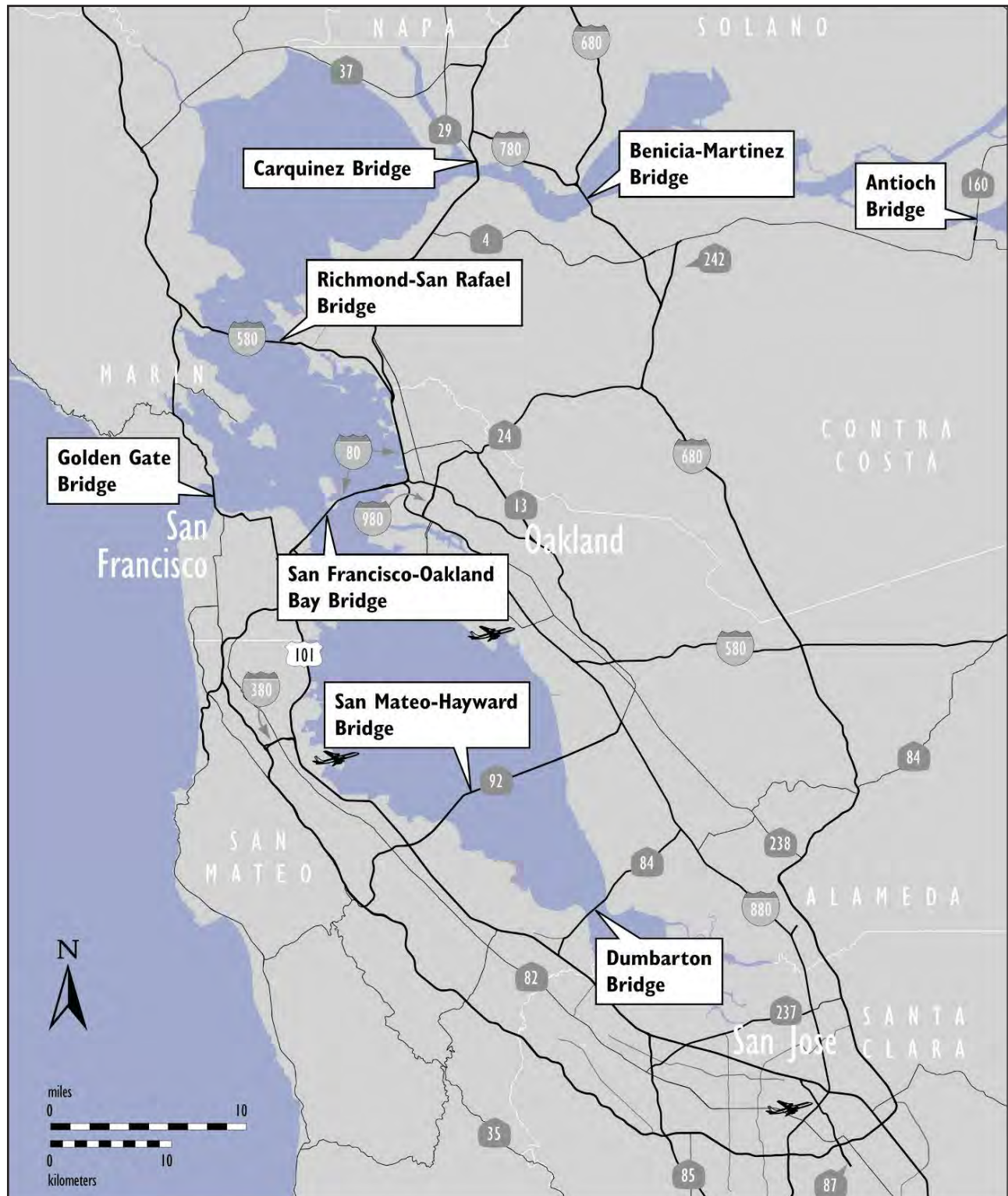
Roadway Box 9 West Arriving by Tugboat for Installation



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## Map of Bay Area Toll Bridges



\* The Golden Gate Bridge is owned and operated by the Golden Gate Bridge, Highway, and Transportation District.

## Introduction

In July 2005, Assembly Bill (AB) 144 (Hancock) created the Toll Bridge Program Oversight Committee (TBPOC) to implement a project oversight and project control process for the Benicia-Martinez Bridge and State Toll Bridge Seismic Retrofit Program projects. The TBPOC consists of the Caltrans Director, the Bay Area Toll Authority (BATA) Executive Director and the Executive Director of the California Transportation Commission (CTC). The TBPOC's project oversight and control processes include, but are not limited to, reviewing bid specifications and documents, providing field staff to review ongoing costs, reviewing and approving significant change orders and claims in excess of \$1 million (as defined by the Committee) and preparing project reports. AB 144 identified the Toll Bridge Seismic Retrofit Program (TBSRP) and the new Benicia-Martinez Bridge Project as being under the direct oversight of the TBPOC. In January 2010, Assembly Bill (AB) 1175 (Torlakson) amended the TBSRP to include the Antioch and Dumbarton seismic retrofit projects. The current Toll Bridge Seismic Retrofit Program is as follows:

Toll Bridge Seismic Retrofit Projects	Seismic Safety Status
Dumbarton Bridge Seismic Retrofit	Construction
Antioch Bridge Seismic Retrofit	Construction
San Francisco-Oakland Bay Bridge East Span Replacement	Construction
San Francisco-Oakland Bay Bridge West Approach Replacement	Complete
San Francisco-Oakland Bay Bridge West Span Seismic Retrofit	Complete
San Mateo-Hayward Bridge Seismic Retrofit	Complete
Richmond-San Rafael Bridge Seismic Retrofit	Complete
1958 Carquinez Bridge Seismic Retrofit	Complete
1962 Benicia-Martinez Bridge Seismic Retrofit	Complete
San Diego-Coronado Bridge Seismic Retrofit	Complete
Vincent Thomas Bridge Seismic Retrofit	Complete

The New Benicia-Martinez Bridge is part of a larger program of toll-funded projects called the Regional Measure 1 (RM1) Toll Bridge Program under the responsibility of BATA and Caltrans. While the rest of the projects in the RM1 program are not directly under the responsibility of the TBPOC, BATA and Caltrans will continue to report on their progress as an informational item. The RM1 program includes:

Regional Measure 1 Projects	Open to Traffic Status
Interstate 880/State Route 92 Interchange Reconstruction	Construction
1962 Benicia-Martinez Bridge Reconstruction	Open
New Benicia-Martinez Bridge	Open
Richmond-San Rafael Bridge Deck Overlay Rehabilitation	Open
Richmond-San Rafael Bridge Trestle, Fender & Deck Joint Rehabilitation	Open
Westbound Carquinez Bridge Replacement	Open
San Mateo-Hayward Bridge Widening	Open
State Route 84 Bayfront Expressway Widening	Open
Richmond Parkway	Open

## SUMMARY OF MAJOR PROJECT HIGHLIGHTS, ISSUES, AND ACTIONS



SAS Roadway Box 9E in Place



SAS T1 Lift 2 Second Shaft Being Raised into Position



SAS Eastbound Bike Path Support Beams and Skyway

### Toll Bridge Seismic Retrofit Program Risk Management

A major element of the 2005 AB144, the law creating the TBPOC, was legislative direction to implement a more aggressive risk management program. Such a program has been implemented in stages over time to ensure development of a robust and comprehensive approach to risk management.

A comprehensive risk assessment is performed for each project in the program on a quarterly basis. Based upon those assessments, a forecast is developed using the average cost of risk. These forecasts can both increase and decrease as risks are identified, resolved or retired. Nonetheless, assurances have been made that the public is informed of the risks that have been identified and the possible expense they could necessitate.

As of the end of the third quarter of 2010, the 50 percent probable draw on Program Contingency is \$210 million. The potential draw ranges from about \$75 million to \$350 million. The current Program Contingency balance is sufficient to cover the cost of currently identified risks. Risk mitigation actions are continuously developed and implemented to reduce the potential draw on the Program Contingency.

### San Francisco-Oakland Bay Bridge (SFOBB) East Span Seismic Replacement Project SAS Superstructure Contract

The prime contractor constructing the Self-Anchored Suspension (SAS) Bridge from the completed Skyway to Yerba Buena Island is a joint venture of American Bridge/Fluor (ABF). **Significant progress is being made both in the Bay Area and around the world. The first 18 of 28 steel roadway boxes have arrived and 16 were lifted into place as of mid-October 2010. The second shipment of tower lift shafts have been placed into position on top of the tower foundation. The two steel roadway boxes 10 east and westbound and tower lift 3 shafts are forecast to be shipped on November 15, 2010 and are expected to arrive at Pier 7 in Oakland in mid-December, 2010.**

These boxes, fabricated in Shanghai, China, join other bridge components that have been arriving from around the country and the world. All bridge components undergo a rigorous quality review by the



**San Francisco-Oakland Bay Bridge Detour Structure Completed over the Labor Day Weekend 2009**

fabricator, ABF, and Caltrans to ensure that only bridge components that have been built in accordance to the specifications will be shipped. Shipments of roadway and tower boxes will continue throughout the year.

The completion of the last roadway sections at the east end of the new span are on the critical path and the east end fabrication has been delayed due to the complexity of the work. In September 2010, the TBPOC negotiated a change to the contract with the contractor to address these challenges, mitigate delays, and to accelerate the remaining work with a goal of opening the bridge to traffic by 2013. The change agreed to is a “seismic safety opening” of the bridge to traffic before non-essential systems are completed, like architectural lighting or removal of unneeded temporary support structures. **This October, ABF presented an accelerated schedule (for the “seismic safety opening”), which is currently under evaluation.**

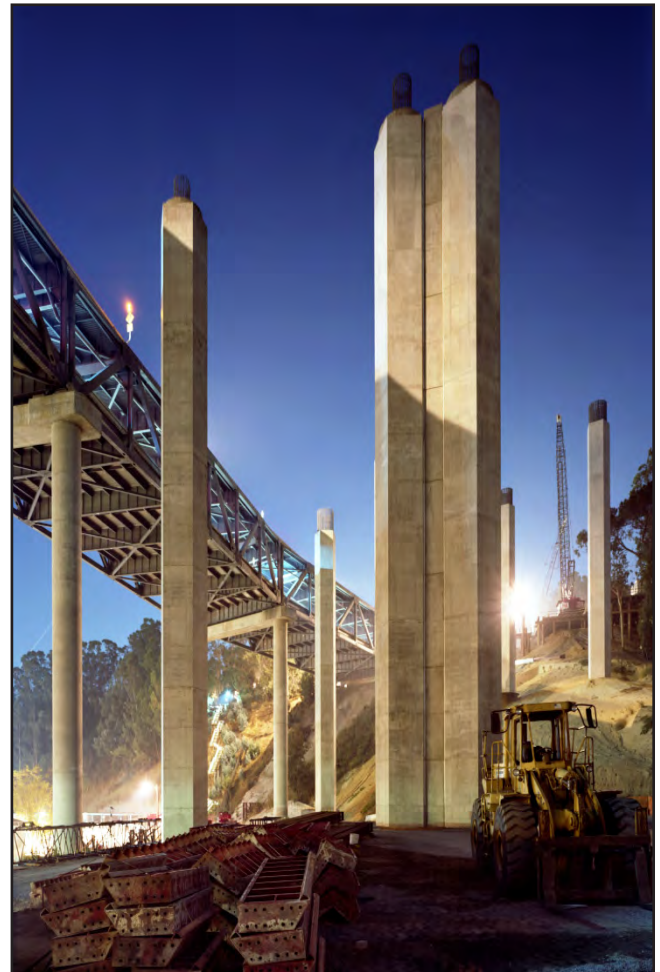
To fund the change and replenish contract contingency, the TBPOC approved an amendment to the budget for the SAS contract to be consistent with the \$2.0 billion Second Quarter 2010 forecast which resulted in an approved budget increase of \$293 million. This action will not require any change to the overall Toll Bridge Seismic Retrofit Program budget because there are adequate program contingency funds available to cover this budget change for the SAS contract.

## Yerba Buena Island Detour Contract

The area was completely turned over to the Yerba Buena Island Transition Structures (YBITS) #1 contractor effective October 1, 2010, and the detour contractor, CC Myers, demobilized in early October 2010. Caltrans accepted the contract on October 22, 2010.

## Yerba Buena Island Transition Structures #1 Contract

The YBITS#1 contract has been awarded to MCM Construction, the same contractor that completed the Oakland Touchdown (OTD) #1 contract. MCM mobilized and began delivering equipment and material to start construction in September 2010, and will have total access to the area effective October 1, 2010.



**Yerba Buena Island Transition Structures Columns**

## SUMMARY OF MAJOR PROJECT HIGHLIGHTS, ISSUES, AND ACTIONS



Oakland Touchdown Bike Path and Hand Railing



Oakland Touchdown Service Platforms Installed



Dumbarton Bridge -48-inch Diameter Pipe Piles Arrive at Project Site

### Oakland Touchdown #1 Contract

The Oakland Touchdown (OTD) #1 contractor, MCM Construction completed the work on June 8, 2010. The contract constructed the westbound approach from the toll plaza to the Skyway structure and the portion of the eastbound approach that is not in conflict with the existing bridge structure.

### TBSRP Capital Outlay Support

The capital outlay support (COS) budget, originally established as a part of AB 144 in 2005, was based on a schedule that assumed bridge opening in 2012. After the SAS contract was rebid, interested contractors requested an additional year to be added to the schedule. To ensure a competitive bidding pool, the TBPOC changed the approved schedule to reflect bridge opening in 2013, but delayed increasing the COS budget to cover the project extension with the belief that an accelerated early completion was still possible and that COS costs could be contained. Since that time, early completion has not materialized and the TBPOC has subsequently approved COS budget increases to be funded from the COS reserves set aside within the original program contingency for project extensions or delays. Opportunities to economize and reduce costs in this area will continue to be pursued, however, additional COS is forecast to be needed from the program contingency.

### TBSRP Programmatic Risks

This category includes risks that are not yet scoped within existing contracts and/or that spread across multiple contracts. The interdependencies between all of the contracts in the program result in the potential for one contract's delay to impact the entire program that are accounted for in the net programmatic risks.

### Dumbarton Bridge Seismic Retrofit

June 15, 2010, Caltrans opened seven bids for the Dumbarton Bridge Seismic Retrofit Project. The low bidder, Shimmick Construction Company, Inc. was substantially less than the engineer's estimate. Given the low bid and the current estimated support costs and project contingencies, on September 2, 2010, the TBPOC was requested to amend the project budget to \$149 million, which is \$216 million below the original estimate.



Antioch Bridge Position of Vertical Stiffeners

### Antioch Bridge Seismic Retrofit

Bids for the Antioch Bridge Retrofit Contract were opened on March 10, 2010. The contract was awarded to California Engineering Contractors, Inc. on April 22, 2010. The awarded contract was significantly less than the engineer's estimate for the work and has resulted in a sizeable cost forecast reduction. The original budget for the project was \$267 million. Because of the low bid, the TBPOC has reduced the project budget to \$101 million. The retrofit is forecast to be completed by May 2012.



Antioch Bridge Piers Being Fitted for Construction Access Scaffolding

### Regional Measure 1 Toll Bridge Program (RM1)

#### Interstate 880/State Route 92 Interchange Reconstruction Project

Work is now ongoing on the remaining northern half of the separation structure. The project is forecast to be substantially completed in September 2011, pending weather or unforeseen construction delays.



92/880 NWCONN Bridge Construction in Progress

## Toll Bridge Seismic Retrofit Program Cost Summary

	Contract Status	AB 144/SB 66 Budget (July 2005)	TBPOC Approved Changes	Current TBPOC Approved Budget (October 2010)	Cost to Date (October 2010)	Current Cost Forecast (October 2010)	Cost Variance	Cost Status
		a	b	c = a + b	d	e	f = e - c	
<b>SFOBB East Span Seismic Replacement</b>								
Capital Outlay Construction								
Skyway	Completed	1,293.0	(38.9)	1,254.1	1,236.9	1,254.1	-	●
SAS Marine Foundations	Completed	313.5	(32.6)	280.9	274.8	280.9	-	●
SAS Superstructure	Construction	1,753.7	293.1	2,046.8	1,189.8	2,097.4	50.6	●
YBI Detour	Completed	131.9	360.9	492.8	461.3	487.5	(5.3)	●
YBI Transition Structures (YBITS)		299.3	(93.0)	206.3	15.8	243.9	37.6	●
YBITS 1	Construction			144.0	15.8	169.5	25.5	●
YBITS 2	Design			59.0	-	71.1	12.1	●
YBITS Landscaping	Design			3.3	-	3.3	-	●
Oakland Touchdown (OTD)		283.8	4.2	288.0	209.1	280.2	(7.8)	●
OTD 1	Completed			212.0	201.3	203.4	(8.6)	●
OTD 2	Design			62.0	-	62.8	0.8	●
OTD Electrical Systems	Design			4.4	-	4.4	-	●
Submerged Electric Cable	Completed			9.6	7.9	9.6	-	●
Existing Bridge Demolition	Design	239.2	(0.1)	239.1	-	233.0	(6.1)	●
Stormwater Treatment Measures	Completed	15.0	3.3	18.3	16.7	18.3	-	●
Other Completed Contracts	Completed	90.4	(0.1)	90.3	89.9	90.4	0.1	●
Capital Outlay Support		959.3	203.0	1,162.3	882.2	1,282.5	120.2	●
Right-of-Way and Environmental Mitigation		72.4	-	72.4	51.3	72.4	-	●
Other Budgeted Capital		35.1	(3.3)	31.8	0.7	7.7	(24.1)	●
<b>Total SFOBB East Span Replacement</b>		<b>5,486.6</b>	<b>696.5</b>	<b>6,183.1</b>	<b>4,428.5</b>	<b>6,348.3</b>	<b>165.2</b>	
<b>Antioch Bridge Seismic Retrofit</b>								
Capital Outlay Construction and Mitigation	Construction		70.0	70.0	8.3	63.6	(6.4)	●
Capital Outlay Support			31.0	31.0	16.6	35.5	4.5	●
<b>Total Antioch Bridge Seismic Retrofit</b>		-	<b>101.0</b>	<b>101.0</b>	<b>24.9</b>	<b>99.1</b>	<b>(1.9)</b>	
<b>Dumbarton Bridge Seismic Retrofit</b>								
Capital Outlay Construction and Mitigation	Awarded		92.7	92.7	1.2	92.7	-	●
Capital Outlay Support			56.0	56.0	22.7	56.0	-	●
<b>Total Dumbarton Bridge Seismic Retrofit</b>		-	<b>148.7</b>	<b>148.7</b>	<b>23.9</b>	<b>148.7</b>	-	
Other Program Projects		2,268.4	(64.6)	2,203.8	2,158.9	2,191.7	(12.1)	●
Miscellaneous Program Costs		30.0	-	30.0	25.5	30.0	-	●
Net Programmatic Risks <sup>1</sup>		-	-	-	-	59.1	59.1	●
Program Contingency		900.0	(484.6)	415.4	-	205.1	(210.3)	●
<b>Total Toll Bridge Seismic Retrofit Program <sup>2</sup></b>		<b>8,685.0</b>	<b>397.0</b>	<b>9,082.0</b>	<b>6,661.7</b>	<b>9,082.0</b>	-	●

● Within approved schedule and budget

● Identified potential project risks that could significantly impact approved schedules and budgets if not mitigated

● Known project impacts with forthcoming changes to approved schedules and budgets

## Toll Bridge Seismic Retrofit Program Schedule Summary

	AB144/SB 66 Project Completion Schedule Baseline (July 2005)	TBPOC Approved Changes (Months)	Current TBPOC Approved Completion Schedule (October 2010)	Current Completion Forecast (October 2010)	Schedule Variance (Months)	Schedule Status	Remarks/Notes
	g	h	i = g + h	j	k = j - i	l	
<b>SFOBB East Span Seismic Replacement</b>							
Contract Completion							
Skyway	Apr 2007	8	Dec 2007	Dec 2007	-	●	See Page 28
SAS Marine Foundations	Jun 2008	(5)	Jan 2008	Jan 2008	-	●	See Page 18
SAS Superstructure	Mar 2012	29	Aug 2014	Aug 2014	-	●	See Page 19
YBI Detour	Jul 2007	41	Dec 2010	Oct 2010	(2)	●	See Page 15
YBI Transition Structures (YBITS)	Nov 2013	12	Nov 2014	Mar 2015	4		See Page 16
YBITS 1			Sep 2013	Dec 2013	3	●	
YBITS 2			Nov 2014	Mar 2015	4	●	
YBITS Landscaping			TBD	TBD	-	●	
Oakland Touchdown	Nov 2013	12	Nov 2014	Mar 2015	4		See Page 29
OTD 1			Jun 2010	Jun 2010	-	●	
OTD 2			Nov 2014	Nov 2014	-	●	
OTD Electrical Systems			TBD	TBD	-	●	
Submerged Electric Cable			Jan 2008	Jan 2008	-	●	
Existing Bridge Demolition	Sep 2014	12	Sep 2015	Dec 2015	3	●	
Stormwater Treatment Measures	Mar 2008	-	Mar 2008	Mar 2008	-	●	
<b>SFOBB East Span Bridge Opening and Other Milestones</b>							
OTD Westbound Access			Aug 2009	Aug 2009	-	●	
YBI Detour Open			Sep 2009	Sep 2009	-	●	See Page 15
Westbound Open	Sep 2011	26	Dec 2013	Dec 2013	-	●	
Eastbound Open	Sep 2012	14	Dec 2013	Dec 2013	-	●	
<b>Antioch Bridge Seismic Retrofit</b>							
Contract Completion			Aug 2012	May 2012	(3)	●	See Page 32
<b>Dumbarton Bridge Seismic Retrofit</b>							
Contract Completion			Sep 2013	Sep 2013	-	●	See Page 34

<sup>1</sup> The Net Programmatic Risks of \$202.8 million comprises \$195.8 million program level risks and \$7 million risk reconciliation.

<sup>2</sup> Figures may not sum up to totals due to rounding effects.

## Regional Measure 1 Program Cost Summary

	Contract Status	BATA Baseline Budget (July 2005)	BATA Approved Changes	Current BATA Approved Budget (October 2010)	Cost to Date (October 2010)	Current Cost Forecast (October 2010)	Cost Variance	Cost Status
		a	b	c = a + b	d	e	f = e - c	
<b>Interstate 880/Route 92 Interchange Reconstruction</b>								
Capital Outlay Construction	Construction	94.8	66.2	161.0	109.2	161.0	-	●
Capital Outlay Support		28.8	34.6	63.4	55.4	63.4	-	●
Capital Outlay Right-of-Way		9.9	7.0	16.9	12.7	16.9	-	●
Project Reserve		0.3	3.4	3.7	-	3.7	-	
<b>Total I-880/SR-92 Interchange Reconstruction</b>		<b>133.8</b>	<b>111.2</b>	<b>245.0</b>	<b>177.3</b>	<b>245.0</b>	<b>-</b>	
<b>Other Completed Program Projects</b>		<b>1,978.8</b>	<b>182.6</b>	<b>2,161.4</b>	<b>2,087.2</b>	<b>2,161.4</b>	<b>-</b>	
<b>Total Regional Measure 1 Toll Bridge Program <sup>1</sup></b>		<b>2,112.6</b>	<b>293.8</b>	<b>2,406.4</b>	<b>2,264.5</b>	<b>2,406.4</b>	<b>-</b>	

- Within approved schedule and budget
  - Identified potential project risks that could significantly impact approved schedules and budgets if not mitigated
  - Known project impacts with forthcoming changes to approved schedules and budgets
- <sup>1</sup> Figures may not sum up to totals due to rounding effects.

## Regional Measure 1 Program Schedule Summary

	BATA Baseline Completion Schedule (July 2005)	BATA Approved Changes (Months)	Current BATA Approved Completion Schedule (October 2010)	Current Completion Forecast (October 2010)	Schedule Variance (Months)	Schedule Status	Remarks/Notes
	g	h	i = g + h	j	k = j - i	l	
<a href="#">Interstate 880/Route 92 Interchange Reconstruction</a>							
Contract Completion							
Interchange Reconstruction	Dec 2010	9	Jun 2011	Sep 2011	3	●	See Page 40





Shear-Leg Crane Barge Installing Roadway Box 9 Westbound

## TOLL BRIDGE SEISMIC RETROFIT PROGRAM

## TOLL BRIDGE SEISMIC RETROFIT PROGRAM

### San Francisco-Oakland Bay Bridge Seismic Retrofit Strategy

When a 250-ton section of the upper deck of the East Span collapsed during the 7.1-magnitude Loma Prieta Earthquake in 1989, it was a wake-up call for the entire Bay Area. While the East Span quickly reopened within a month, critical questions lingered: How could the Bay Bridge—a vital regional lifeline structure—be strengthened to withstand the next major earthquake? Seismic experts from around the world determined that to make each separate element seismically safe on a bridge of this size, the work must be divided into numerous projects. Each project presents unique challenges. Yet there is one common challenge — the need to accommodate the more than 280,000 vehicles that cross the bridge each day.



West Approach Overview

#### West Approach Seismic Replacement Project

**Project Status: Completed 2009**

Seismic safety retrofit work on the West Approach in San Francisco—bounded on the west by 5th Street and on the east by the anchorage of the west span at Beale Street—involved completely removing and replacing this one-mile stretch of Interstate 80, as well as six on- and off-ramps within the confines of the West Approach's original footprint. This project was completed on April 8, 2009.

#### West Span Seismic Retrofit Project

**Project Status: Completed 2004**

The West Span lies between Yerba Buena Island and San Francisco and is made up of two complete suspension spans connected at a center anchorage. Retrofit work included adding massive amounts of steel and concrete to strengthen the entire West Span, along with new seismic shock absorbers and bracing.



San Francisco-Oakland Bay Bridge West Span



## East Span Seismic Replacement Project

Rather than a seismic retrofit, the two-mile long East Span is being completely rebuilt. When completed, the new East Span will consist of several different sections, but will appear as a single streamlined span. The eastbound and westbound lanes of the East Span will no longer include upper and lower decks. The lanes will instead be parallel, providing motorists with expansive views of the bay. These views will also be enjoyed by bicyclists and pedestrians, thanks to a new path on the south side of the bridge that will extend all the way to Yerba Buena Island. The new span will be aligned north of the existing bridge to allow traffic to continue to flow on the existing bridge as crews build the new span.

The new span will feature the world's longest Self-Anchored Suspension (SAS) bridge that will be connected to an elegant roadway supported by piers (Skyway), which will gradually slope down toward the Oakland shoreline (Oakland Touchdown). A new transition structure on Yerba Buena Island (YBI) will connect the SAS to the YBI Tunnel and will transition the East Span's side-by-side traffic to the upper and lower decks of the tunnel and West Span.

When construction of the new East Span is complete and vehicles have been safely rerouted to it, the original East Span will be demolished.



Architectural Rendering of the New East Span of the San Francisco-Oakland Bay Bridge



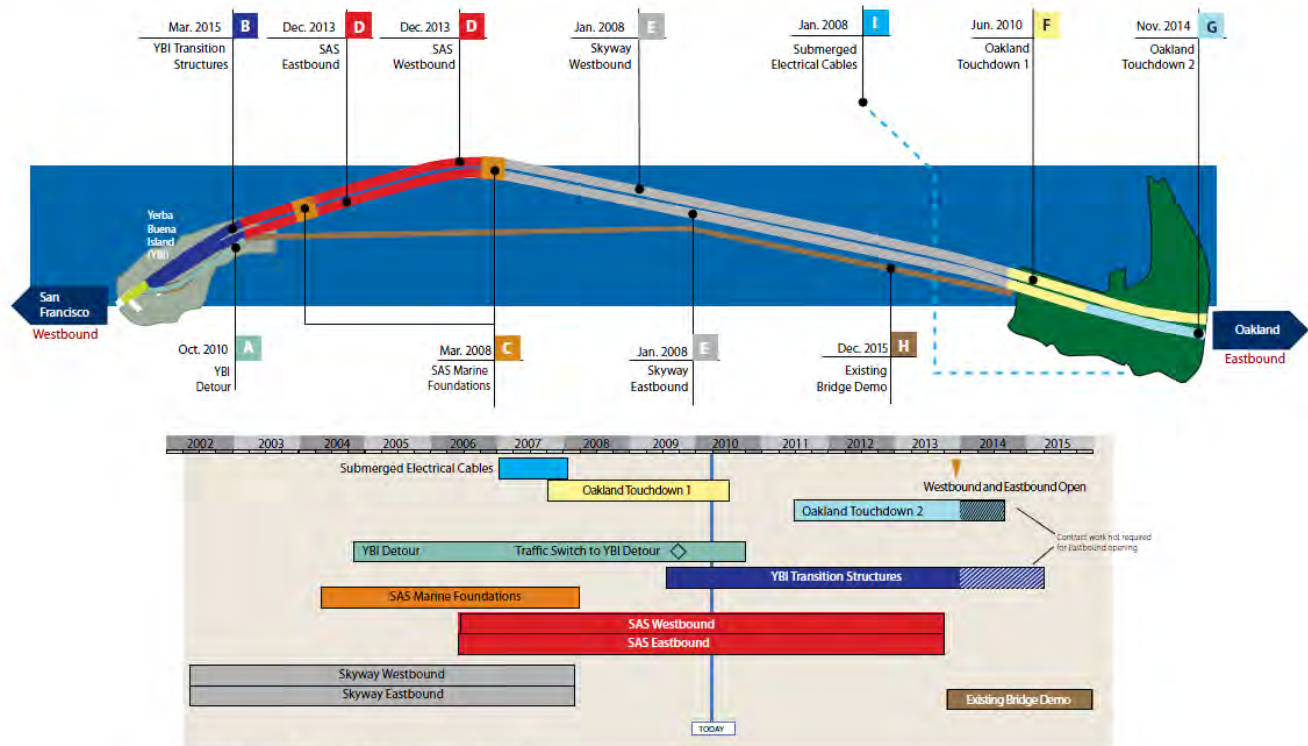
## TOLL BRIDGE SEISMIC RETROFIT PROGRAM

### San Francisco-Oakland Bay Bridge East Span Replacement Project Summary

The new East Span bridge can be split into four major components—the Skyway and the Self-Anchored Suspension bridge in the middle and the Yerba Buena Island Transition Structures and Oakland Touchdown approaches at either end. Each component is being constructed by one to three separate contracts that have been sequenced together.

Highlighted below are the major East Span contracts and their schedules. The letter designation before each contract corresponds to contract descriptions in the report.

#### SFOBB East Span Work Sequence



Note: Dates shown above are project completion dates.



## TOLL BRIDGE SEISMIC RETROFIT PROGRAM

### San Francisco-Oakland Bay Bridge East Span Replacement Project Yerba Buena Island Detour (YBID)

As with all of the Bay Bridge's seismic retrofit projects, crews must build the Yerba Buena Island Transition Structures (YBITS) without disrupting traffic. To accomplish this task, YBID eastbound and westbound traffic was shifted off the existing roadway and onto a temporary detour on Labor Day weekend 2009. Drivers will use this detour, just south of the original roadway, until traffic is moved onto the new East Span.

#### A YBID Contract

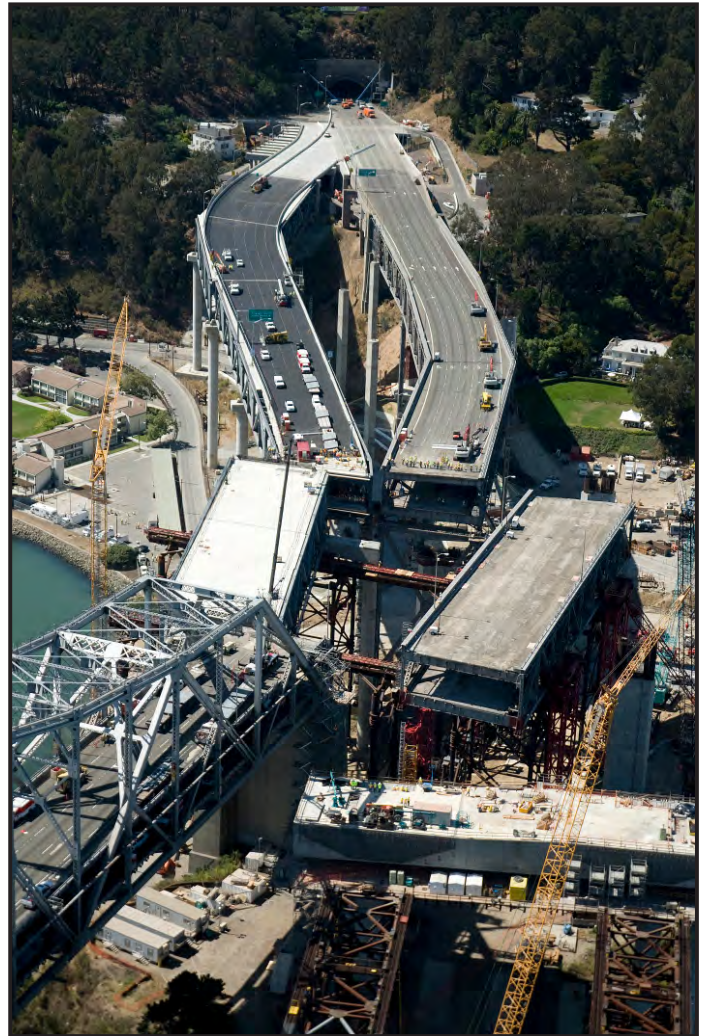
Contractor: C.C. Myers Inc

Approved Capital Outlay Budget: \$492.8 M

Status: 100% Complete as of October 2010

This contract was originally awarded in early 2004 to construct the detour structure for the planned 2006 opening of the new East Span. Due to the re-advertisement of the SAS superstructure contract in 2005 because of a lack of funding at the time, the bridge opening was rescheduled to 2013. To better integrate the contract into the current East Span schedule and to improve seismic safety and mitigate future construction risks, the TBPOC has approved a number of changes to the contract, including adding the deck replacement work near the tunnel that was rolled into place over Labor Day weekend 2007, advancing future transition structure foundation work and making design enhancements to the temporary detour structure. These changes have increased the budget and forecast for the contract to cover the revised project scope and potential project risks.

**Status:** Work is completed on the demolition of the old approach span and all of accelerated foundations for the future transition structures from the Self-Anchored Suspension (SAS) bridge to the tunnel. The area was turned over to the Yerba Buena Island Transition Structures (YBITS) #1 contractor, MCM, on October 1, 2010. CC Myers demobilized in early October and the contract was accepted by Caltrans on October 22, 2010.



YBI East Tie-In Rolled In Labor Day 2009



West Tie-In Phase #1 Rolled in on Labor Day 2007

## TOLL BRIDGE SEISMIC RETROFIT PROGRAM

### San Francisco-Oakland Bay Bridge East Span Replacement Project Yerba Buena Island Transition Structures (YBITS)

The new Yerba Buena Island Transition Structures (YBITS) will connect the new SAS bridge span to the existing Yerba Buena Island Tunnel, transitioning the new side-by-side roadway decks to the upper and lower decks of the tunnel. The new structures will be cast-in-place reinforced concrete structures that will look very similar to the already constructed Skyway structures. While some YBITS foundations and columns have been advanced by the YBID contract, the remaining work will be completed under three separate YBITS contracts.

#### **B** YBITS #1 Contract

Contractor: MCM Construction, Inc.

Approved Capital Outlay Budget: \$144.0 M

Status: 15% Complete as of October 2010



Overview of YBITS Advanced Columns, YBID and SAS W2 Cap Beam

The YBITS #1 contract will construct the mainline roadway structures from the SAS bridge to the YBI tunnel. On February 4, 2010, Caltrans awarded the YBITS #1 Contract to MCM Construction, Inc.

**Status:** The contractor, MCM Construction, Inc., continues to work on the access trestle and eastbound and westbound footings and columns. Westbound frame 2 falsework is forecast to start on November 23, 2010.



Rendering of Overview of Future Yerba Buena Island Transition Structures in Progress (top) with Completed Detour Viaduct (bottom)



## YBITS #2 Contract

Contractor: TBD

Approved Capital Outlay Budget: \$59.0 M

Status: **In Design**

The YBITS #2 contract will demolish the detour viaduct after all traffic is shifted to the new bridge and will construct a new eastbound on-ramp to the bridge in its place. The new ramp will also provide the final link for bicycle/pedestrian access off the SAS bridge onto Yerba Buena Island.

## YBITS Landscaping Contract

Contractor: TBD

Approved Capital Outlay Budget \$3.3M

Status: **In Design**

Upon completion of the YBITS work, a follow-on landscaping contract will be executed to re-plant and landscape the area.

## Yerba Buena Island Transition Structures Advanced Work

Due to the re-advertisement of the SAS superstructure contract in 2005, it became necessary to temporarily suspend the detour contract and make design changes to the viaduct. To make more effective use of the extended contract duration and to reduce overall project schedule and construction risks, the TBPOC approved the advancement of foundation and column work from the Yerba Buena Island Transition Structures contract.

**Status:** Construction completed early October 2010 and the contract was accepted by Caltrans on October 22, 2010.



Yerba Buena Island Transition Structures Advanced Columns Constructed

## TOLL BRIDGE SEISMIC RETROFIT PROGRAM

### San Francisco-Oakland Bay Bridge East Span Replacement Project Self-Anchored Suspension (SAS) Bridge

If one single element bestows world class status on the new Bay Bridge East Span, it is the Self-Anchored Suspension (SAS) bridge. This engineering marvel will be the world's largest SAS span at 2,047 feet in length, as well as the first bridge of its kind built with a single tower.

The SAS was separated into three separate contracts— construction of the land-based foundations and columns at Pier W2; construction of the marine-based foundations and columns at Piers T1 and E2; and construction of the SAS steel superstructure, including the tower, roadway, and cabling. Construction of the foundations at Pier W2 and at Piers T1 and E2 was completed in 2004 and 2007, respectively.



SAS Tower Lift 2 Shafts Being Raised into Position

### SAS Land Foundation Contract

Contractor: West Bay Builders, Inc.

Approved Capital Outlay Budget: \$26.4 M

Status: Completed October 2004

The twin W2 columns on Yerba Buena Island provide essential support for the western end of the SAS bridge, where the single main cable for the suspension span will extend down from the tower and wrap around and under the western end of the roadway deck. Each of these huge columns required massive amounts of concrete and steel and are anchored 80 feet into the island's solid bedrock.

### C SAS Marine Foundations Contract

Contractor: Kiewit/FCI/Manson, Joint Venture

Approved Capital Outlay Budget: \$280.9 M

Status: Completed January 2008

Construction of the piers at E2 and T1 required significant on-water resources to drive the foundation support piles down, not only to bedrock, but also through the bay water and mud (see rendering on facing page).

The T1 foundation piles extend 196 feet below the waterline and are anchored into bedrock with heavily reinforced concrete rock sockets that are drilled into the rock. Driven nearly 340 feet deep, the steel and concrete E2 foundation piles were driven 100 feet deeper than the deepest timber piles of the existing east span in order to get through the bay mud and reach solid bedrock.



## D SAS Superstructure Contract

Contractor: American Bridge/Fluor Enterprises, Joint Venture

Approved Capital Outlay Budget: \$2.05 B

Status: **61% Complete as of October 2010**

The SAS bridge is not just another suspension bridge. Rising 525 feet above mean sea level and embedded in rock, the single-tower SAS span is designed to withstand a massive earthquake. Traditional main cable suspension bridges have twin cables with smaller suspender cables connected to them. These cables hold up the roadbed and are anchored to the east end of the roadway boxes. While there will appear to be two main cables on the SAS, there will actually only be one. This single cable will be anchored within the eastern end of the roadway, carried over the tower and then wrapped around the two side-by-side decks at the western end.

The single-steel tower will be made up of four separate legs connected by shear link beams which function much like a fuse in an electrical circuit. These beams will absorb most of the impact from an earthquake, preventing damage to the tower legs.

The next several pages highlight the construction sequence of the SAS and are followed by detailed updates on specific construction activities.



Architectural Rendering of New Self-Anchored Suspension Span and Skyway



## TOLL BRIDGE SEISMIC RETROFIT PROGRAM

### *Self-Anchored Suspension (SAS) Construction Sequence*

#### STEP 1 - CONSTRUCT TEMPORARY SUPPORT STRUCTURES

Temporary support structures will need to be erected from the Skyway to Yerba Buena Island to support the new SAS bridge during construction.

**Status:** Foundations and temporary support structures were completed in mid-September 2010.

#### STEP 2 - INSTALL ROADWAYS

The roadway boxes are being lifted into place by using the shear-leg crane barge. The boxes are being bolted and welded together atop the temporary support trusses to form two continuous parallel steel roadway boxes.

**Status:** Roadway box 8 westbound was lifted into position on October 6, 2010. Nine crossbeams have been erected between the roadway boxes. Roadway boxes 9 east and west arrived at Pier 7 on October 9, 2010 and are forecast for installation in November 2010. Roadway boxes 10 east and west will be shipped on November 15, 2010 and are expected to arrive at Pier 7 in Oakland on December 22, 2010.



#### STEP 3 - INSTALL TOWER

Each of the four legs of the tower was erected in five separate lifts. The tower lifts will be installed using a temporary erection tower and lifting jacks.

**Status:** The second tower lift shafts arrived at Pier 7 in Oakland on October 9, 2010 and were all lifted into position at the end of October 2010. The third tower shafts will be shipped on November 15, 2010 and are expected to arrive at Pier 7 in Oakland on December 22, 2010.



#### STEP 4 - MAIN CABLE AND SUSPENDER INSTALLATION

The main cable will be pulled from the east end of the SAS bridge, over the tower, and wrapped around Pier W2 and again back over the tower and to the west end of the SAS bridge deck. Suspenders cables will be added to lift the roadway decks off the temporary support structure.

**Status:** Cable installation is pending the erection of the tower and roadway spans. All cables have been fabricated, shipped and stored in the warehouse at Pier 7 in Oakland.



#### STEP 5 - WESTBOUND AND EASTBOUND SEISMIC SAFETY OPENING

The new bridge will now open simultaneously in both the westbound and eastbound directions.

**Status:** Westbound and eastbound opening is forecast for December 2013.



## TOLL BRIDGE SEISMIC RETROFIT PROGRAM

### *Self-Anchored Suspension (SAS) Superstructure Fabrication Activities*

#### **Roadway and Tower Segments**

Like giant three-dimensional jigsaw puzzles, the roadway and tower lifts of the SAS bridge are hollow steel shells that are internally strengthened and stiffened by a highly engineered network of welded steel ribs and diaphragms. The use of steel in this manner allows for a flexible yet relatively light and strong structure able to withstand the massive loads placed on the bridge during seismic events.

On the critical path to completing the bridge are the fabrication of the last four roadway boxes (segments 13 and 14 east and west). Delays to beginning the fabrication of these boxes precluded the westbound opening of the bridge in 2012. The TBPOC now forecasts opening the bridge in both directions in December 2013.

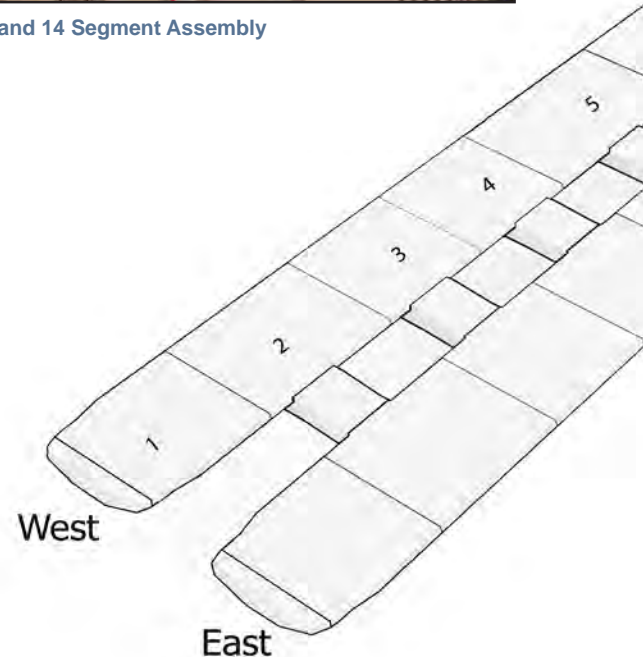
All components undergo a rigorous quality review by ZPMC, ABF, and Caltrans to ensure that only bridge components that have been built according to contract specifications will be shipped.

**Roadway Box Fabrication Status:** As shown in the diagram to the right, roadway boxes 1 through 9 east and west have been completed and shipped to the Bay Area. Roadway box 9 east and west arrived at Pier 7 in Oakland on October 9, 2010. Roadway boxes 10 east and west are forecast to ship on November 15, 2010 and are expected to arrive at Pier 7 in Oakland on December 22, 2010. The remaining roadway boxes are still being pieced together into larger segments. Fabrication of sub-assemblies for roadway box 13 and 14 started in March 2010 and are forecast to be fabricated and shipped in July 2011.

**Tower Fabrication Status:** Each of the four legs of the tower is composed of five separate lifts. The lifts get progressively shorter and lighter as they progress up the tower. The second lift 4 shafts of the tower arrived on October 9 and all shafts were lifted into position by October 29, 2010. Tower lift 3 shafts will be shipped on November 15, 2010 and are expected to arrive in Oakland on December 22, 2010. The tower lift 4 shafts are in vertical assembly with the grillage (lifts) to ensure alignment at the ZPMC assembly yard and are forecast for shipment in January 2011.

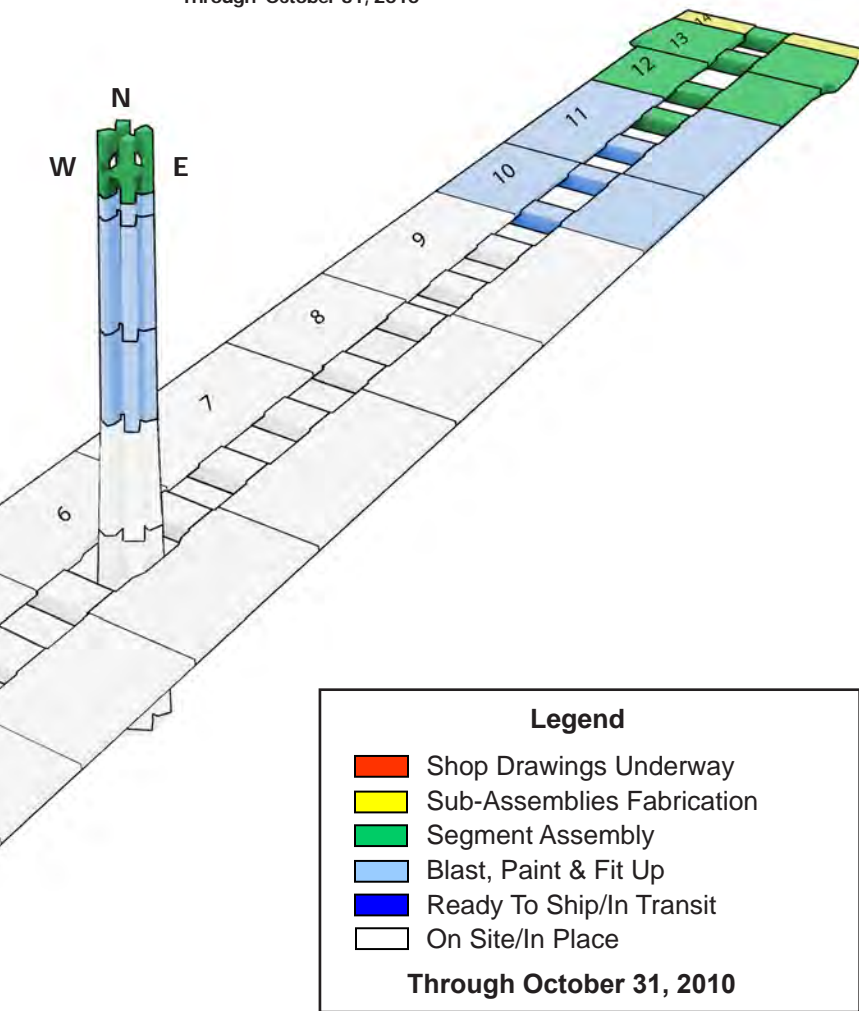


SAS Lift 13 and 14 Segment Assembly



## Fabrication Progress Diagram

Through October 31, 2010



SAS Tower Lift 3 West



SAS Roadway Box Segments - Lift 11 in Trial Assembly Yard



SAS Tower Lift 4 Shafts in Trial Assembly with Grillage

## TOLL BRIDGE SEISMIC RETROFIT PROGRAM

### ***Self-Anchored Suspension (SAS) Superstructure Fabrication Activities (cont.)***

#### ***Cables and Suspenders***

One continuous main cable will be used to support the roadway deck of the SAS bridge. Anchored into the eastern end of the bridge, the main cable will be anchored with the roadway box at the east end of the SAS near Pier E1, extend over the main tower at T1, loop around the western end of the roadway decks at Pier W2, and then travel back over the main tower to the western end of the roadway box. The main cable will be made up of bundles of individual wire strands. Supporting the roadway decks to the main cable will be a number of smaller suspender cables. The main cable will be fabricated in China and the suspender cables in Missouri, USA.

**Status:** All tower cables have been fabricated and delivered to the job site and stored at Pier 7 warehouse in Oakland. All cable bands are forecast to be **completed and shipped to the job site by January 2011 and the suspender ropes are forecast to be completed by December 2010. The cable band bolts are undergoing testing in Germany.**

#### ***Saddles, Bearings, Hinges, and Other Bridge Components***

The mounts on which the main cable and suspender ropes will sit are made from solid steel castings. Castings for the main cable saddles are being made by Japan Steel Works, while the cable bands and brackets are being made by Goodwin Steel in the United Kingdom.

The bridge bearings and hinges that support, connect, and transfer loads from the self-anchored suspension (SAS) span to the adjoining sections of the new east span are being fabricated in a number of locations. Work on the bearings is being performed in Pennsylvania, USA and Hochang, South Korea, while hinge pipe beams are being fabricated in Oregon, USA.

**Status:** The cable saddles and hinges for the W2 cap beam and YBITS are fabricated and stored at the job site. The west deviation saddle is being erected and is forecast to be completed by November 15, 2010. The eastbound Hinge K pipe beams were erected in October 2010. The westbound Hinge K pipe beams are also in process of installation.



SAS Pouring for Casting for Spherical Bearings



SAS Eastbound Fixed Stair Sections Assembly



## TOLL BRIDGE SEISMIC RETROFIT PROGRAM

### *Self-Anchored Suspension (SAS) Superstructure Field Activities*



Shear-Leg Crane Barge Lifting Roadway Box 9W



SAS Shear-Leg Crane Barge Lifting Roadway Box 9W



SAS E2 Cap Beam and the end of the Skyway

#### ***Shear-Leg Crane Barge***

The massive shear-leg barge crane that is helping to build the SAS superstructure arrived in the San Francisco Bay on March 12, 2009 after a trans-Pacific voyage.

The crane and barge are separate units operating as a single entity named the “Left Coast Lifter.” The 400-by-100-foot barge is a U.S.-flagged vessel that was custom built in Portland, Oregon by U.S. Barge, LLC and outfitted with the crane by Shanghai Zhenhua Heavy Industry Co. Ltd. (ZPMC) at a facility near Shanghai, China. The crane’s boom weighs 992 tons and is 328 feet long. The crane can lift up to 1,873 tons, including the deck and tower boxes for the SAS.

**Status:** The shear-leg crane barge arrived at the job site March 2009. The crane has off-loaded and placed all temporary support structures and SAS roadway boxes and crossbeams.

#### ***Temporary Support Structures***

To erect the roadway decks and tower of the bridge, temporary support structures were first put in place. Almost a bridge in itself, the temporary support structures stretch from the end of the completed Skyway back to Yerba Buena Island. For the tower, a strand jack system is being built into the tower’s temporary frame to elevate the upper sections of the tower into place. These temporary supports are being fabricated in the Bay Area, as well as in Oregon and in China at ZPMC.

**Status:** The temporary support structures are complete.

#### ***Cap Beams***

Construction of the massive steel-reinforced concrete cap beams that link the columns at Piers W2 and E2 was left to the SAS superstructure contractor and represents the only concrete portions of work on that contract. The east and west ends of the SAS roadway will rest on the cap beams and the main cable will wrap around Pier W2, while anchoring into the east end of the SAS deck sections near E2.

**Status:** Completed March 2009

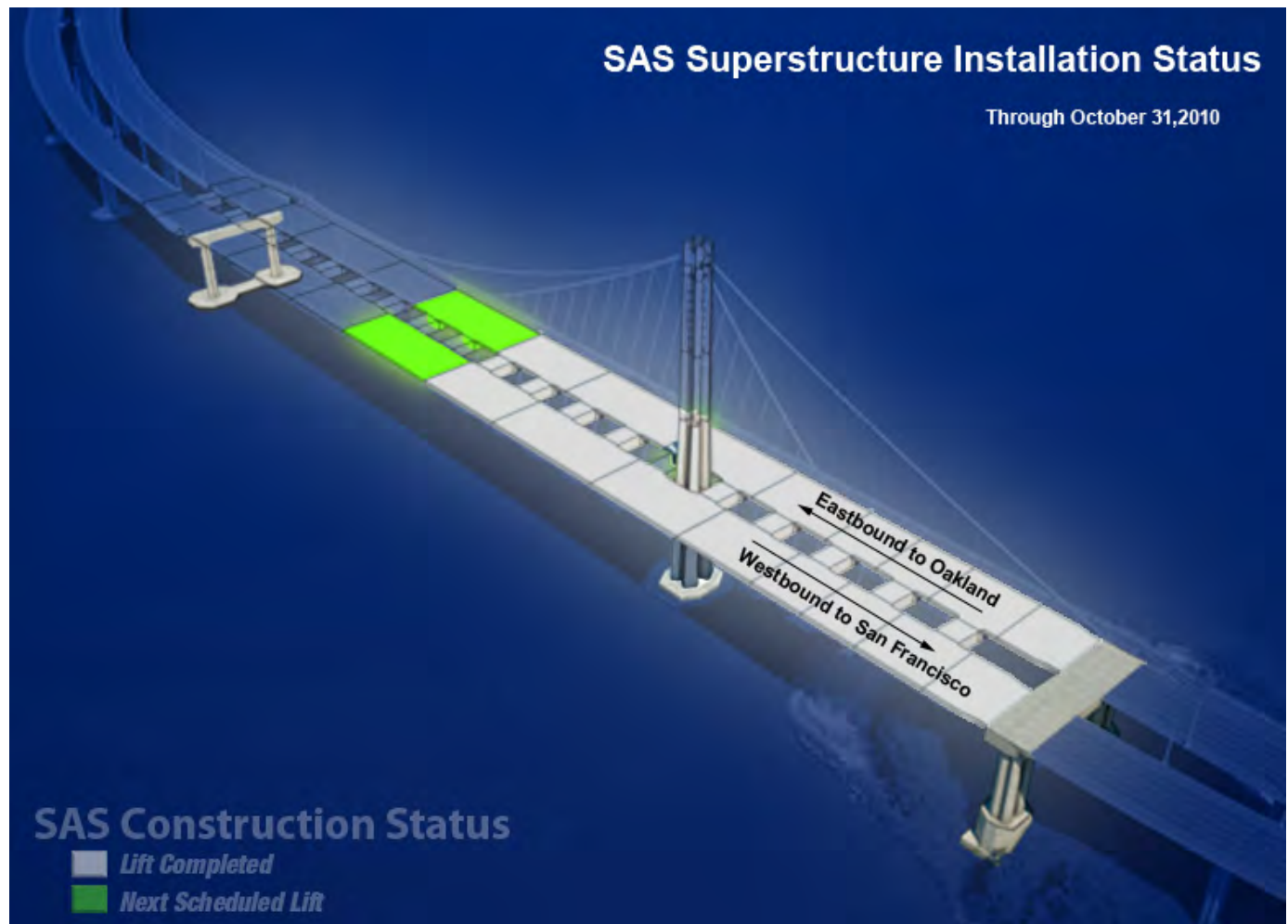
## TOLL BRIDGE SEISMIC RETROFIT PROGRAM

### *Self-Anchored Suspension (SAS) Superstructure Installation Activities*

Upon arrival in Oakland, the steel roadway and tower sections are off-loaded directly from the transport ship onto barges to await installation atop the temporary support structures. Steel roadway boxes will be installed from west to east. Due to the shallow waters near Yerba Buena Island, the eastbound lanes on the south side of the new bridge will be installed first, then to be followed by the westbound lanes. In total, there are 28 roadway boxes (14 in each direction) that range from 560 to 1660 tons and from 80 to 230 feet long.

The tower comprises four legs, each made up of four tower lifts that make up the majority of the height of the tower, the tower grillage, and finally the tower head.

**Status:** Sixteen of 28 roadway boxes (1 through 8 east and west) have been placed on top of temporary support structures to form a continuous roadway. Tower lift 2 shafts have been lifted into place and are being welded and bolted together. Roadway boxes 9 east and west are planned to be lifted into position in November 2010. Tower lift 3 shafts and roadway box 10 east and west are forecast to be shipped on November 15, 2010 and are expected to arrive at Pier 7 in Oakland on December 22, 2010. Tower lift 2 shaft erection started on October 25, 2010 and was completed on October 29, 2010.





Shear-Leg Crane Barge (on right of bridge) Awaiting Arrival for a Roadway Box (being pulled by tugboat on left)



Overview of Progress of Roadway Boxes Eastbound and Westbound

## TOLL BRIDGE SEISMIC RETROFIT PROGRAM

### San Francisco-Oakland Bay Bridge East Span Replacement Project Skyway

The Skyway, which comprises much of the new East Span, will drastically change the appearance of the Bay Bridge. Replacing the gray steel that currently cages drivers, a graceful, elevated roadway supported by piers will provide sweeping views of the bay.

#### **E Skyway Contract**

Contractor: Kiewit/FCI/Manson, Joint Venture

Approved Capital Outlay Budget: \$1.25 B

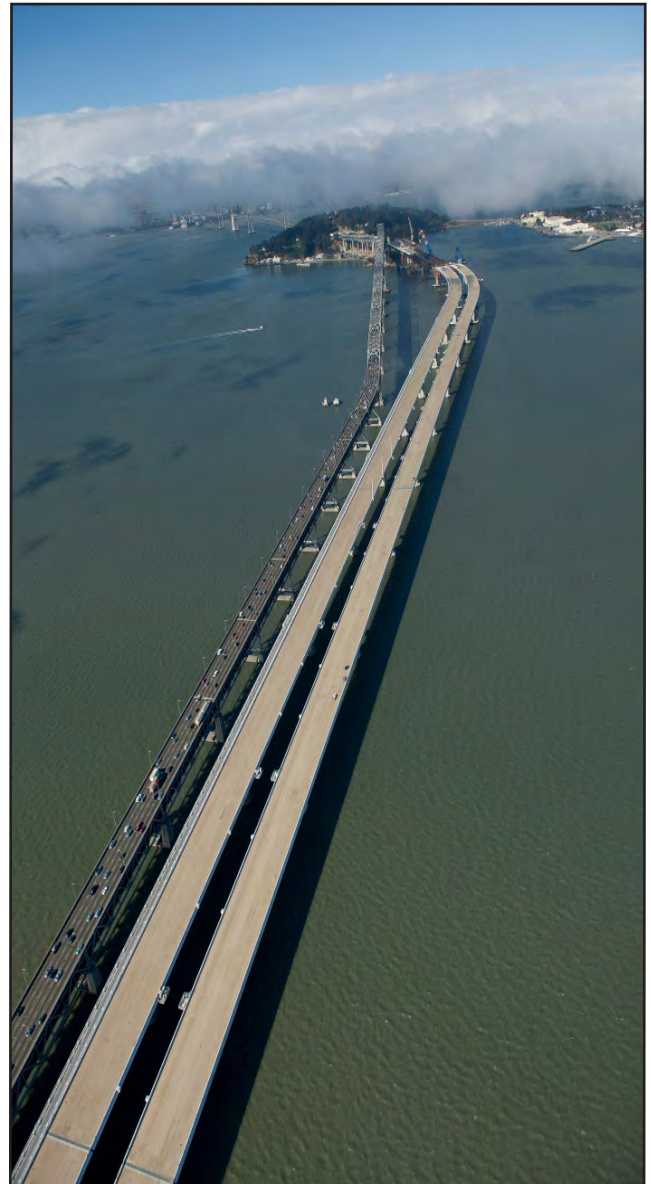
Status: Completed March 2008

Extending for more than a mile across Oakland mudflats, the Skyway is the longest section of the East Span. It sits between the new Self-Anchored Suspension (SAS) span and the Oakland Touchdown. In addition to incorporating the latest seismic-safety technology, the side-by-side roadway decks of the Skyway feature shoulders and lane widths built to modern standards.

The Skyway's decks are composed of 452 pre-cast concrete segments (standing three stories high), containing approximately 200 million pounds of structural steel, 120 million pounds of reinforcing steel, 200 thousand linear feet of piling and about 450 thousand cubic yards of concrete. These are the largest segments of their kind ever cast and were lifted into place by custom-made winches.

The Skyway marine foundation consists of 160 hollow steel pipe piles measuring eight feet in diameter and dispersed among 14 sets of piers. The 365-ton piles were driven more than 300 feet into the deep bay mud. The new East Span piles were battered or driven in at an angle, rather than vertically, to obtain maximum strength and resistance.

Designed specifically to move during a major earthquake, the Skyway features several state-of-the-art seismic safety innovations, including 60-foot-long hinge pipe beams. These beams will allow deck segments on the Skyway to move, enabling the deck to withstand greater motion and to absorb more earthquake energy.



Overview of the Skyway Looking West Toward Yerba Buena Island



## TOLL BRIDGE SEISMIC RETROFIT PROGRAM

### San Francisco-Oakland Bay Bridge East Span Replacement Project Oakland Touchdown

When completed, the Oakland Touchdown (OTD) structures will connect Interstate 80 in Oakland to the new side-by-side decks of the new East Span. For westbound drivers, the OTD will be their introduction to the graceful new East Span. For eastbound drivers from San Francisco, this section of the bridge will carry them from the Skyway to the East Bay, offering unobstructed views of the Oakland hills.

The OTD will be constructed through two contracts. The first contract will build the new westbound lanes, as well as part of the eastbound lanes. The second contract to complete the eastbound lanes cannot fully begin until westbound traffic is shifted onto the new bridge. This enables a portion of the upper deck of the existing bridge to be demolished allowing for a smooth transition for the new eastbound lanes in Oakland.

#### **F** Oakland Touchdown #1 Contract

Contractor: MCM Construction, Inc.  
Approved Capital Outlay Budget: \$212.0 M  
Status: Completed June 2010

The OTD #1 contract constructs the entire 1,000-foot-long westbound approach from the toll plaza to the Skyway. When completed, the westbound approach structure will provide direct access to the westbound Skyway. In the eastbound direction, the contract will construct a portion of the eastbound structure and all of the eastbound foundations that are not in conflict with the existing bridge.

**Status:** MCM Construction, Inc. completed OTD #1 westbound and eastbound phase 1 on June 8, 2010.

#### **G** Oakland Touchdown #2 Contract

Contractor: TBD  
Approved Capital Outlay Budget: \$62.0 M  
Status: In Design

The OTD #2 contract will complete the eastbound approach structure from the end of the Skyway to Oakland. This work is critical to the eastbound opening of the new bridge, **by December 2013**. On October 7, 2010, the TBOC approved a plan to expedite the construction of OTD #2 by constructing a temporary eastbound and westbound detour off the existing Oakland Touchdown structures. At its November 9th meeting, the TBPOC will select the temporary detour alternative to be implemented. The contract change order process will then begin in November to start the new eastbound detour construction by the end of 2010.



Aerial View of Oakland Touchdown Looking West

## TOLL BRIDGE SEISMIC RETROFIT PROGRAM

### San Francisco-Oakland Bay Bridge East Span Replacement Project Other Contracts

A number of contracts needed to relocate utilities, clear areas of archeological artifacts, and prepare areas for future work have already been completed. The last major contract will be the eventual demolition and removal of the existing bridge, which by that time will have served the Bay Area for nearly 80 years. Following is a status of some the other East Span contracts.

#### East Span Interim Seismic Retrofit

Contractors: 1) California Engineering  
2) Balfour Beatty

Approved Capital Outlay Budget: \$30.8 M

Status: Completed October 2000

After the 1989 Loma Prieta Earthquake, and before the final retrofit strategy was determined for the East Span, Caltrans completed an interim retrofit of the existing bridge to prevent a catastrophic collapse of the bridge should a similar earthquake occur before the East Span was completely replaced. The interim retrofit was performed under two separate contracts that lengthened pier seats, added some structural members, and strengthened areas of the bridge so they would be more resilient during an earthquake.

#### Stormwater Treatment Measures

Contractor: Diablo Construction, Inc.

Approved Capital Outlay Budget: \$18.3 M

Status: Completed December 2008

The Stormwater Treatment Measures contract implemented a number of best practices for the management and treatment of stormwater runoff. Focused on the areas around and approaching the toll plaza, the contract added new drainage and built new bio-retention swales and other related constructs.



Archeological Investigations



Existing East Span of the San Francisco-Oakland Bay Bridge



Stormwater Retention Basin



## Yerba Buena Island Substation

Contractor: West Bay Builders

Approved Capital Outlay Budget: \$11.6 M

Status: Completed May 2005

This contract relocated an electrical substation just east of the Yerba Buena Island Tunnel in preparation for the new East Span.

## Pile Installation Demonstration

Contractor: Manson and Dutra, Joint Venture

Approved Capital Outlay Budget: \$9.2 M

Status: Completed December 2000

While large-diameter battered piles are common in offshore drilling, the new East Span is one of the first bridges to use them in its foundations. To minimize project risks and build industry knowledge, a pile installation demonstration project was initiated to prove the efficacy of the proposed technology and methodology. The demonstration was highly successful and helped result in zero contract change orders or claims for pile driving on the project.

## H Existing Bridge Demolition

Contractor: TBD

Approved Capital Outlay Budget: \$239.1 M

Status: In Design

Design work on the contract will start in earnest as the opening of the new bridge to traffic approaches.



New YBI Electrical Substation

## I Electrical Cable Relocation

Contractor: Manson Construction

Approved Capital Outlay Budget: \$9.6 M

Status: Completed January 2008

A submerged cable from Oakland that is close to where the new bridge will touch down supplies electrical power to Treasure Island. To avoid any possible damage to the cable during construction, two new replacement cables were run from Oakland to Treasure Island. The extra cable was funded by the Treasure Island Development Authority.

## TOLL BRIDGE SEISMIC RETROFIT PROGRAM

### Antioch Bridge Seismic Retrofit Project

Contractor: California Engineering Contractors, Inc.

Approved Capital Outlay Budget: \$70.0 M

Status: 36% Complete as of October 2010

Serving the Delta region of the Bay Area, the Antioch Bridge takes State Route 160 traffic over the San Joaquin River, linking eastern Contra Costa County with Sacramento County. The current 1.8-mile-long steel plate girder bridge was opened in 1978 with one lane in each direction. The major retrofit measure for the bridge includes installing seismic isolation bearings at each of the 41 piers, strengthening piers 12 through 31 with steel cross-bracing between column bents and installing steel casings at all columns located at the Sherman Island approach slab bridge.

**Status:** Installation of the stair towers and suspended platforms 8 through 21 continues and pier 7's suspended platform is completed. Placement of jacking stiffeners were complete on piers 3, 7 and 40. Column casing fabrication is in progress, as is cross-bracing structure tubing. The first set of isolation bearings have been manufactured and successfully passed QA testing at the Caltrans Seismic Response Modification Device (SRMD) facility located at the University of California, San Diego. The first two bearings are scheduled to be installed at pier 3 in late November.



Pier 3 Vertical Lifting Jacks Supported on Temporary Pipe Columns



Piers Being Fitted for Construction Access Scaffolding



Jacks Sit within Circular Rims on top of Jacking Beams



Loaded Bearing in Test Apparatus

## Dumbarton Bridge Seismic Retrofit Project

Contractor: Shimmick Construction Company, Inc.

Approved Capital Outlay Budget: \$92.7 M

Status: Awarded

The current Dumbarton Bridge was opened to traffic in 1982 linking the cities of Newark in Alameda County and East Palo Alto in San Mateo County. The 1.6-mile long bridge has six lanes (three in each direction) and an eight-foot bicycle/pedestrian pathway. The bridge is a combination of reinforced concrete and steel girders that support a reinforced lightweight concrete roadway on reinforced concrete columns. The current retrofit strategy for the bridge includes superstructure and deck modifications and installation of isolation bearings.

Status: On June 15, 2010, Caltrans opened seven bids for the Dumbarton Bridge Seismic Retrofit Project. The low bidder, Shimmick Construction Company, Inc., was substantially lower than the engineer's estimate. On September 2, 2010, the TBPOC reviewed the budget for the project. Notice to proceed was given to Shimmick Construction Company on October 19, 2010. Given the low bid for project construction and the current estimated support costs and project contingencies, the budget was approved and revised to a total of \$267



Dumbarton Bridge

million, which is \$216 million below the original estimate. In preparation of site construction, the contractor has installed pump station piles and has relocated electrical lines to enable installation of 48-inch piles along the approach spans.

The steel pipe piling met contract requirements and were completed and accepted at the job site.

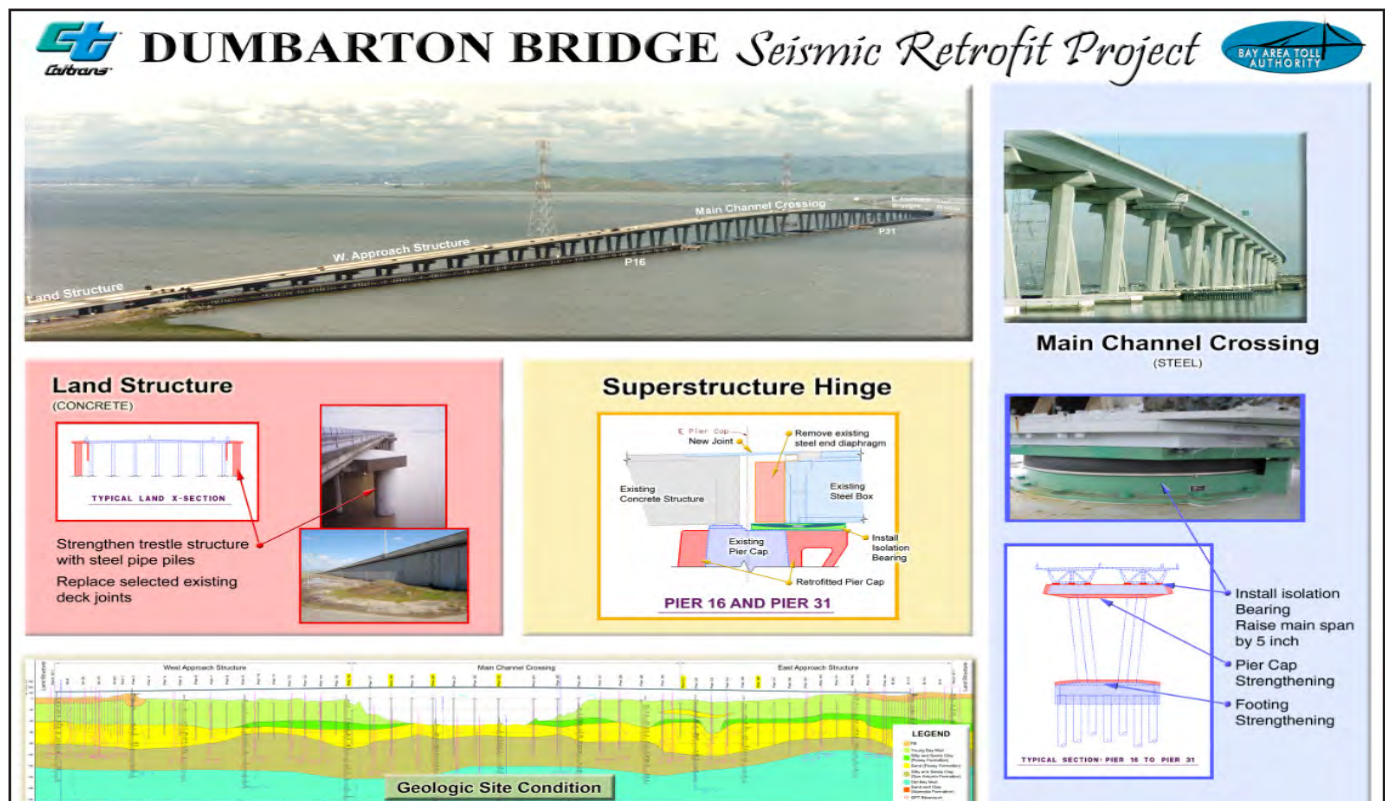


Diagram of Proposed Retrofit Work on the Dumbarton Bridge



The 48-inch diameter Pipe Piles Arrive at Project Site



Dumbarton Bridge

## TOLL BRIDGE SEISMIC RETROFIT PROGRAM

### Other Completed Projects

In the 1990s, the State Legislature identified seven of the nine state-owned toll bridges for seismic retrofit. In addition to the San Francisco-Oakland Bay Bridge, these included the Benicia-Martinez, Carquinez, Richmond-San Rafael and San Mateo-Hayward bridges in the Bay Area, and the Vincent Thomas and Coronado bridges in Southern California. Other than the East Span of the Bay Bridge, the retrofits of all of the bridges have been completed as planned.

#### San Mateo-Hayward Bridge Seismic Retrofit Project

**Project Status: Completed 2000**

The San Mateo-Hayward Bridge seismic retrofit project focused on strengthening the high-rise portion of the span. The foundations of the bridge were significantly upgraded with additional piles.



High-Rise Section of San Mateo-Hayward Bridge

#### 1958 Carquinez Bridge Seismic Retrofit Project

**Project Status: Completed 2002**

The eastbound 1958 Carquinez Bridge was retrofitted in 2002 with additional reinforcement of the cantilever thru-truss structure.



1958 Carquinez Bridge (foreground) with the 1927 Span (middle) under Demolition and the New Alfred Zampa Memorial Bridge (background)

#### 1962 Benicia-Martinez Bridge Seismic Retrofit Project

**Project Status: Completed 2003**

The southbound 1962 Benicia-Martinez Bridge was retrofitted to "Lifeline" status with the strengthening of the foundations and columns and the addition of seismic bearings that allow the bridge to move during a major seismic event. The Lifeline status means the bridge is designed to sustain minor to moderate damage after an event and to reopen quickly to emergency response traffic.



1962 Benicia-Martinez Bridge (right)

## Richmond-San Rafael Bridge Seismic Retrofit Project

**Project Status: Completed 2005**

The Richmond-San Rafael Bridge was retrofitted to a “No Collapse” classification to avoid catastrophic failure during a major seismic event. The foundations, columns, and truss of the bridge were strengthened, and the entire low-rise approach viaduct from Marin County was replaced.



Richmond-San Rafael Bridge

## Los Angeles-Vincent Thomas Bridge Seismic Retrofit Project

**Project Status: Completed 2000**

The Vincent Thomas Bridge is a 1,500-foot long suspension bridge crossing the Los Angeles Harbor in Los Angeles that links San Pedro with Terminal Island. The bridge was one of two state-owned toll bridges in Southern California (the other being the San Diego-Coronado Bridge). Opened in 1963, the bridge was seismically retrofitted as part of the TBSRP in 2000.



Los Angeles-Vincent Thomas Bridge

## San Diego-Coronado Bridge Seismic Retrofit Project

**Project Status: Completed 2002**

The San Diego-Coronado Bridge crosses over San Diego Bay and links the cities of San Diego and Coronado. Opened in 1969, the 2.1-mile long bridge was seismically retrofitted as part of the Toll Bridge Seismic Retrofit Project in 2002.



San Diego-Coronado Bridge





Benicia-Martinez Bridge

## REGIONAL MEASURE 1 TOLL BRIDGE PROGRAM

## REGIONAL MEASURE 1 PROGRAM

### Interstate 880/State Route 92 Interchange Reconstruction Project

**Project Status: In Construction**

The Interstate 880/State Route 92 Interchange Reconstruction Project is the final project under the Regional Measure 1 Toll Bridge Program. Project completion fulfills a promise made to Bay Area voters in 1988 to deliver a slate of projects that help expand bridge capacity and improve safety on the bridges.

### Interstate 880/State Route 92 Interchange Reconstruction Contract

Contractor: Flatiron/Granite

Approved Capital Outlay Budget: \$158.0 M

Status: 81% Complete as of October 2010

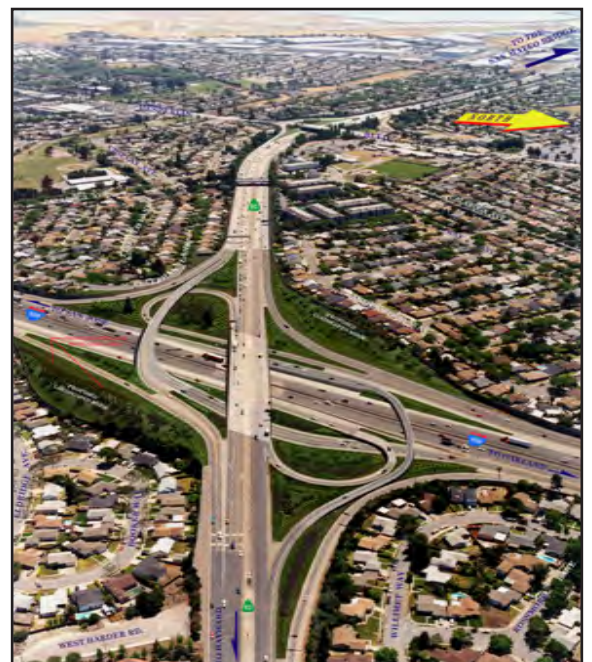
This corridor is consistently one of the Bay Area's most congested during the evening commute. This is due in part to the lane merging and weaving that is required by the existing cloverleaf interchange. The new interchange will feature direct freeway-to-freeway connector ramps that will increase traffic capacity and improve overall safety and traffic operations in the area. With the new direct-connector ramps, drivers coming off the San Mateo-Hayward Bridge can access Interstate 880 without having to compete with traffic headed onto east Route 92 from south Interstate 880 (see progress photos on pages 64 and 65).



Calaroga Bridge Work in Progress



Looking Southwest at the New NWCONN Bridge



Future Interstate 880/State Route 92 Interchange (as simulated) Looking West toward San Mateo

### ***Stage 1 – Construct East Route 92 to North Interstate 880 Connector***

The new east Route 92 to north Interstate 880 connector (ENCONN) is the most critical fly over structure for relieving congestion in the corridor. The ENCONN will be first used as a detour to allow for future stages of work, while keeping traffic flowing.

**Status:** ENCONN was completed and opened to detour traffic on May 16, 2009.

### ***Stage 2 – Replace South Side of Route 92 Separation Structure***

By detouring eastbound Route 92 traffic onto ENCONN, the existing separation structure that carries SR92 over I-880 can be replaced. The existing structure will be cut lengthwise, and then demolished and replaced separately. In this stage, the south side of the structure will be replaced, while west Route 92 and south Interstate 880 to east Route 92 traffic will stay on the remaining structure.

**Status:** Work on the south side of the separation structure is complete.

### ***Stage 3 – Replace North Side of Route 92 Separation Structure***

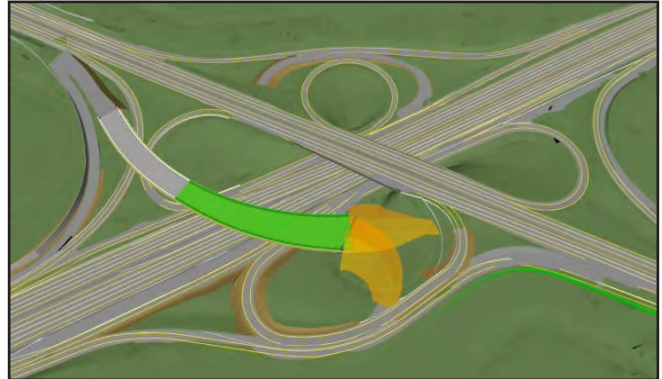
Upon completion of Stage 2, the existing north side of the separation structure will be demolished and replaced. Its traffic will then be shifted onto the newly reconstructed south side.

**Status:** Foundations for the north portion of the separation structure have been completed. Work is now on going on the superstructure.

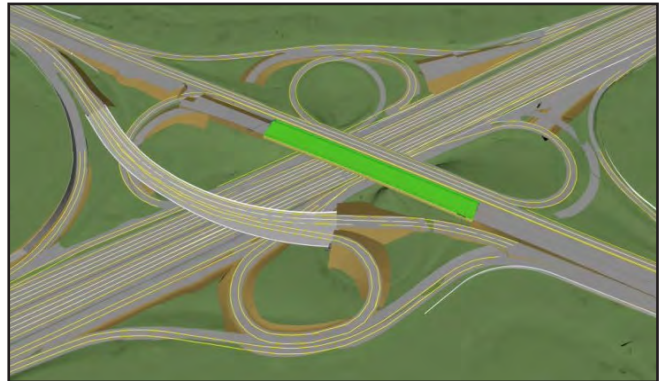
### ***Stage 4 – Final Realignment and Other Work***

In addition to ENCONN and the separation structure, direct north 880 to west 92 connector (NWCONN) and west 92 to south 880 connector (WSCONN) remain to be completed. The new Eldridge Avenue pedestrian overcrossing is now complete.

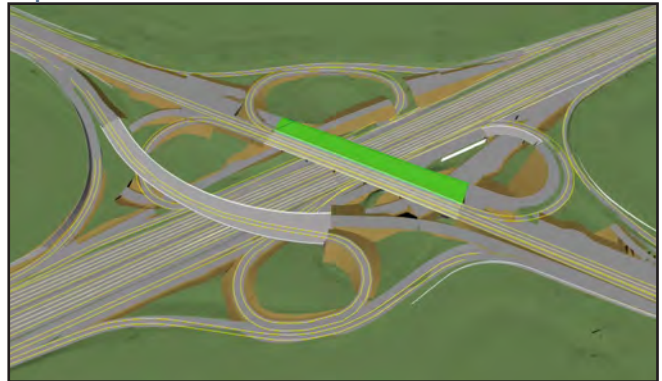
**Status:** The NWCONN structure is scheduled to be opened to traffic in October.



**Stage 1 - Construct East Route 92 to North Interstate 880 Direct Connector**



**Stage 2 - Demolish and Replace South Side of Route 92 Separation Structure**



**Stage 3 - Demolish and Replace North Side of Route 92 Separation Structure**



**Stage 4 - Final Realignment and Other Work**

## REGIONAL MEASURE 1 PROGRAM

### Other Completed Projects

#### San Mateo-Hayward Bridge-Widening Project

**Project Status: Completed 2003**

This project expanded the low-rise concrete trestle section of the San Mateo-Hayward Bridge to allow for three lanes in each direction to match the existing configuration of the high-rise steel section of the bridge.



Widening of the San Mateo-Hayward Bridge Trestle on Left

#### Richmond-San Rafael Bridge Rehabilitation Projects

**Project Status: Completed 2006**

Two major rehabilitation projects for the Richmond-San Rafael Bridge were funded and completed: (1) replacement of the western concrete approach trestle and ship-collision protection fender system; and (2) rehabilitation of deck joints and resurfacing of the bridge deck.

In 2005, along with the seismic retrofit of the bridge, the trestle and fender replacement work was completed as part of the same project. Under a separate contract in 2006, the bridge was resurfaced with a polyester concrete overlay along with the repair of numerous deck joints.



New Richmond-San Rafael Bridge West Approach Trestle under Construction

#### Richmond Parkway Construction Project

**Project Status: Completed 2001**

The final connections to the Richmond Parkway from Interstate 580 near the Richmond-San Rafael Bridge were completed in May 2001.

## New Alfred Zampa Memorial (Carquinez) Bridge Project

**Project Status: Completed 2003**



New Alfred Zampa Memorial (Carquinez) Bridge Soon after Opening to Traffic, with Crockett Interchange Still under Construction

The new western span of the Carquinez Bridge, which replaced the original 1927 span, is a twin-towered suspension bridge with three mixed-flow lanes, a new carpool lane shoulders and a bicycle and pedestrian pathway.

## Benicia-Martinez Bridge Project

**Project Status: Completed 2009**



Benicia-Martinez Bridge Pedestrian/Bicycle Pathway Opened to the Public in August 2009

A two-year project to rehabilitate and reconfigure the original Benicia-Martinez Bridge began shortly after the opening of the new Congressman George Miller Bridge. The existing 1.2-mile roadway surface on the steel deck truss bridge was modified to carry four lanes of southbound traffic (one more than before)—with shoulders on both sides—plus a bicycle/pedestrian path on the west side of the span that connects to Park Road in Benicia and to Marina Vista Boulevard in Martinez. Reconstruction of the east side of the bridge and approaches was completed in August 2008, and reconstruction of the west side of the bridge and approaches and construction of the bicycle/pedestrian pathway was completed in August 2009.

## Bayfront Expressway (State Route 84) Widening Project

**Project Status: Completed 2004**

This project expanded and improved the roadway from the Dumbarton Bridge touchdown to the US 101/Marsh Road interchange by adding additional lanes and turn pockets and improving bicycle and pedestrian access in the area.



## APPENDICES

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## Appendix A-1: TBSRP AB 144/SB 66 Baseline Budget, Forecasts and Expenditures through October 30, 2010 (\$ Millions)

Contract	AB 144 / SB 66 Budget (07/2005)	Approved Changes	Current Approved Budget (10/2010)	Cost to Date (10/2010)	Cost Forecast (10/2010)	At-Completion Variance
a	c	d	e = c + d	f	g	h = g - e
<b>SFOBB East Span Replacement Project</b>						
Capital Outlay Support	959.3	203.0	1,162.3	882.2	1,282.5	120.2
Capital Outlay Construction	4,492.2	496.8	4,989.0	3,545.6	5,058.1	69.1
Other Budgeted Capital	35.1	(3.3)	31.8	0.7	7.7	(24.1)
<b>Total</b>	<b>5,486.6</b>	<b>696.5</b>	<b>6,183.1</b>	<b>4,428.5</b>	<b>6,348.3</b>	<b>165.2</b>
<b>SFOBB West Approach Replacement</b>						
Capital Outlay Support	120.0	(2.0)	118.0	117.8	118.5	0.5
Capital Outlay Construction	309.0	41.7	350.7	328.1	338.1	(12.6)
<b>Total</b>	<b>429.0</b>	<b>39.7</b>	<b>468.7</b>	<b>445.9</b>	<b>456.6</b>	<b>(12.1)</b>
<b>SFOBB West Span Retrofit</b>						
Capital Outlay Support	75.0	(0.2)	74.8	74.9	74.8	-
Capital Outlay Construction	232.9	(5.5)	227.4	227.4	227.4	-
<b>Total</b>	<b>307.9</b>	<b>(5.7)</b>	<b>302.2</b>	<b>302.3</b>	<b>302.2</b>	<b>-</b>
<b>Richmond-San Rafael Bridge Retrofit</b>						
Capital Outlay Support	134.0	(7.0)	127.0	126.8	127.0	-
Capital Outlay Construction	780.0	(90.5)	689.5	667.5	689.5	-
<b>Total</b>	<b>914.0</b>	<b>(97.5)</b>	<b>816.5</b>	<b>794.3</b>	<b>816.5</b>	<b>-</b>
<b>Benicia-Martinez Bridge Retrofit</b>						
Capital Outlay Support	38.1	-	38.1	38.1	38.1	-
Capital Outlay Construction	139.7	-	139.7	139.7	139.7	-
<b>Total</b>	<b>177.8</b>	<b>-</b>	<b>177.8</b>	<b>177.8</b>	<b>177.8</b>	<b>-</b>
<b>Carquinez Bridge Retrofit</b>						
Capital Outlay Support	28.7	0.1	28.8	28.8	28.8	-
Capital Outlay Construction	85.5	(0.1)	85.4	85.4	85.4	-
<b>Total</b>	<b>114.2</b>	<b>-</b>	<b>114.2</b>	<b>114.2</b>	<b>114.2</b>	<b>-</b>
<b>San Mateo-Hayward Retrofit</b>						
Capital Outlay Support	28.1	-	28.1	28.1	28.1	-
Capital Outlay Construction	135.4	(0.1)	135.3	135.3	135.3	-
<b>Total</b>	<b>163.5</b>	<b>(0.1)</b>	<b>163.4</b>	<b>163.4</b>	<b>163.4</b>	<b>-</b>
<b>Vincent Thomas Bridge Retrofit (Los Angeles)</b>						
Capital Outlay Support	16.4	-	16.4	16.4	16.4	-
Capital Outlay Construction	42.1	(0.1)	42.0	42.0	42.0	-
<b>Total</b>	<b>58.5</b>	<b>(0.1)</b>	<b>58.4</b>	<b>58.4</b>	<b>58.4</b>	<b>-</b>
<b>San Diego-Coronado Bridge Retrofit</b>						
Capital Outlay Support	33.5	(0.3)	33.2	33.2	33.2	-
Capital Outlay Construction	70.0	(0.6)	69.4	69.4	69.4	-
<b>Total</b>	<b>103.5</b>	<b>(0.9)</b>	<b>102.6</b>	<b>102.6</b>	<b>102.6</b>	<b>-</b>

## Appendix A-1: TBSRP AB 144/SB 66 Baseline Budget, Forecasts and Expenditures through October 30, 2010 (\$ Millions) Cont.

Contract	AB 144 / SB 66 Budget (07/2005)	Approved Changes	Current Approved Budget (10/2010)	Cost to Date (10/2010)	Cost Forecast (10/2010)	At- Completion Variance
a	c	d	e = c + d	f	g	h = g - e
<b>Antioch Bridge</b>						
Capital Outlay Support	-	31.0	31.0	10.4	35.5	4.5
Capital Outlay Support by BATA				6.2		
Capital Outlay Construction	-	70.0	70.0	8.3	63.6	(6.4)
<b>Total</b>	<b>-</b>	<b>101.0</b>	<b>101.0</b>	<b>24.9</b>	<b>99.1</b>	<b>(1.9)</b>
<b>Dumbarton Bridge</b>						
Capital Outlay Support	-	56.0	56.0	16.7	56.0	-
Capital Outlay Support by BATA				6.0		
Capital Outlay Construction	-	92.7	92.7	1.2	92.7	-
<b>Total</b>	<b>-</b>	<b>148.7</b>	<b>148.7</b>	<b>23.9</b>	<b>148.7</b>	<b>-</b>
<b>Subtotal Capital Outlay Support</b>	<b>1,433.1</b>	<b>280.6</b>	<b>1,713.7</b>	<b>1,385.6</b>	<b>1,838.9</b>	<b>125.2</b>
<b>Subtotal Capital Outlay</b>	<b>6,286.8</b>	<b>604.3</b>	<b>6,891.1</b>	<b>5,249.9</b>	<b>6,941.2</b>	<b>50.1</b>
<b>Subtotal Other Budgeted Capital</b>	<b>35.1</b>	<b>(3.3)</b>	<b>31.8</b>	<b>0.7</b>	<b>7.7</b>	<b>(24.1)</b>
Miscellaneous Program Costs	30.0	-	30.0	25.5	30.0	-
<b>Subtotal Toll Bridge Seismic Retrofit Program</b>	<b>7,785.0</b>	<b>881.6</b>	<b>8,666.6</b>	<b>6,661.7</b>	<b>8,817.8</b>	<b>151.2</b>
Net Programmatic Risks*	-	-	-	-	59.1	59.1
Program Contingency	900.0	(484.6)	415.4	-	205.1	(210.2)
<b>Total Toll Bridge Seismic Retrofit Program <sup>1</sup></b>	<b>8,685.0</b>	<b>397.0</b>	<b>9,082.0</b>	<b>6,661.7</b>	<b>9,082.0</b>	<b>-</b>

<sup>1</sup> Figures may not sum up to totals due to rounding effects.

## Appendix A-2: TBSRP AB 144/SB 66 Baseline Budget, Forecasts and Expenditures through October 30, 2010 (\$ Millions)

Bridge	AB 144 Baseline Budget	TBPOC Current Approved Budget	Expenditures to date and Encumbrances as of November 2010 see Note (1,4)	not yet spent or Encumbered as of November 2010 see Note (4)	Total Forecast as of October 2010
a	b	c	d	e	f = d + e
<b>Other Completed Projects</b>					
Capital Outlay Support	144.9	144.6	144.6	-	144.6
Capital Outlay	472.6	471.9	472.6	(0.8)	471.8
<b>Total</b>	<b>617.5</b>	<b>616.5</b>	<b>617.2</b>	<b>(0.8)</b>	<b>616.4</b>
<b>Richmond-San Rafael</b>					
Capital Outlay Support	134.0	127.0	126.8	0.2	127.0
Capital Outlay	698.0	689.5	674.1	15.4	689.5
Project Reserves	82.0	-	-	-	-
<b>Total</b>	<b>914.0</b>	<b>816.5</b>	<b>800.9</b>	<b>15.6</b>	<b>816.5</b>
<b>West Span Retrofit</b>					
Capital Outlay Support	75.0	74.8	74.8	-	74.8
Capital Outlay	232.9	227.4	232.9	(5.5)	227.4
<b>Total</b>	<b>307.9</b>	<b>302.2</b>	<b>307.7</b>	<b>(5.5)</b>	<b>302.2</b>
<b>West Approach</b>					
Capital Outlay Support	120.0	118.0	117.8	0.7	118.5
Capital Outlay	309.0	350.7	342.5	(4.4)	338.1
<b>Total</b>	<b>429.0</b>	<b>468.7</b>	<b>460.3</b>	<b>(3.7)</b>	<b>456.6</b>
<b>SFOBB East Span - Skyway</b>					
Capital Outlay Support	197.0	181.2	181.2	-	181.2
Capital Outlay	1,293.0	1,254.1	1,368.3	(114.2)	1,254.1
<b>Total</b>	<b>1,490.0</b>	<b>1,435.3</b>	<b>1,549.5</b>	<b>(114.2)</b>	<b>1,435.3</b>
<b>SFOBB East Span - SAS - Superstructure</b>					
Capital Outlay Support	214.6	375.5	255.7	224.6	480.3
Capital Outlay	1,753.7	2,046.8	1,753.7	343.7	2,097.4
<b>Total</b>	<b>1,968.3</b>	<b>2,422.3</b>	<b>2,009.4</b>	<b>568.3</b>	<b>2,577.7</b>
<b>SFOBB East Span - SAS - Foundations</b>					
Capital Outlay Support	62.5	37.6	37.6	-	37.6
Capital Outlay	339.9	307.3	308.7	(1.4)	307.3
<b>Total</b>	<b>402.4</b>	<b>344.9</b>	<b>346.3</b>	<b>(1.4)</b>	<b>344.9</b>
<b>Small YBI Projects</b>					
Capital Outlay Support	10.6	10.6	10.1	0.5	10.6
Capital Outlay	15.6	15.6	16.6	(0.9)	15.7
<b>Total</b>	<b>26.2</b>	<b>26.2</b>	<b>26.7</b>	<b>(0.4)</b>	<b>26.3</b>
<b>YBI Detour</b>					
Capital Outlay Support	29.5	90.7	85.9	4.4	90.3
Capital Outlay	131.9	492.8	493.1	(5.6)	487.5
<b>Total</b>	<b>161.4</b>	<b>583.5</b>	<b>579.0</b>	<b>(1.2)</b>	<b>577.8</b>
<b>YBI- Transition Structures</b>					
Capital Outlay Support	78.7	106.4	36.1	81.1	117.2
Capital Outlay	299.4	206.3	125.9	118.0	243.9
<b>Total</b>	<b>378.1</b>	<b>312.7</b>	<b>162.0</b>	<b>199.1</b>	<b>361.1</b>

## Appendix A-2: TBSRP AB 144/SB 66 Baseline Budget, Forecasts and Expenditures through October 30, 2010 (\$ Millions) Cont.

Contract	AB 144 Baseline Budget	TBPOC Current Approved Budget	Expenditures to date and Encumbrances as of October 2010 see Note (1,4)	Estimated Costs not yet spent or Encumbered as of October 2010 see Note (4)	Total Forecast as of October 2010
a	b	c	d	e	f = d + e
<b>Oakland Touchdown</b>					
Capital Outlay Support	74.4	93.9	80.6	16.7	97.3
Capital Outlay	283.8	288.0	218.0	62.2	280.2
<b>Total</b>	<b>358.2</b>	<b>381.9</b>	<b>298.6</b>	<b>78.9</b>	<b>377.5</b>
<b>East Span Other Small Projects</b>					
Capital Outlay Support	212.3	206.5	214.2	(7.6)	206.6
Capital Outlay	170.8	170.8	94.0	52.6	146.6
<b>Total</b>	<b>383.1</b>	<b>377.3</b>	<b>308.2</b>	<b>45.0</b>	<b>353.2</b>
<b>Existing Bridge Demolition</b>					
Capital Outlay Support	79.7	59.9	0.4	61.0	61.4
Capital Outlay	239.2	239.1	-	233.0	233.0
<b>Total</b>	<b>318.9</b>	<b>299.0</b>	<b>0.4</b>	<b>294.0</b>	<b>294.4</b>
<b>Antioch Bridge</b>					
Capital Outlay Support	-	31.0	10.4	18.9	29.3
Capital Outlay Support by BATA			<b>6.2</b>	-	<b>6.2</b>
Capital Outlay	-	70.0	47.0	16.6	63.6
<b>Total</b>	<b>-</b>	<b>101.0</b>	<b>63.6</b>	<b>35.5</b>	<b>99.1</b>
<b>Dumbarton Bridge</b>					
Capital Outlay Support	-	56.0	16.7	33.3	50.0
Capital Outlay Support by BATA			6.0	-	6.0
Capital Outlay	-	92.7	0.3	92.4	92.7
<b>Total</b>	<b>-</b>	<b>148.7</b>	<b>23.0</b>	<b>125.7</b>	<b>148.7</b>
<b>Miscellaneous Program Costs</b>	<b>30.0</b>	<b>30.0</b>	<b>25.5</b>	<b>4.5</b>	<b>30.0</b>
<b>Total Capital Outlay Support</b>	<b>1,463.2</b>	<b>1,743.7</b>	<b>1,430.6</b>	<b>438.3</b>	<b>1,868.9</b>
<b>Total Capital Outlay</b>	<b>6,321.8</b>	<b>6,923.0</b>	<b>6,147.7</b>	<b>801.2</b>	<b>6,948.9</b>
<b>Program Total <sup>1</sup></b>	<b>7,785.0</b>	<b>8,666.7</b>	<b>7,578.3</b>	<b>1,239.5</b>	<b>8,817.8</b>

(1). Funds allocated to project or contract for Capital Outlay and Support needs includes Capital Outlay Support total allocation for FY 06/07.

(2). BSA provided a distribution of program contingency in December 2004 based in Bechtel Infrastructure Corporation input.

This Column is subject to revision upon completion of Department's risk assessment update.

(3) Total Capital Outlay Support includes program indirect costs.

(4) Due to the implementation of the new accounting system, the encumbrance data is not available for updating data in Columns D and E at this time.

<sup>1</sup> Figures may not sum up to totals due to rounding effects.

## Appendix B: TBSRP (SFOBB East Span Only) AB 144/SB 66 Baseline Budget, Forecasts and Expenditures through October 30, 2010 (\$ Millions)

Contract a	AB 144 / SB 66 Budget (07/2005) c	Approved Changes d	Current Approved Budget (10/2010) e = c + d	Cost to Date (10/2010) f	Cost Forecast (10/2010) g	At- Completion Variance h = g - e
<b>San Francisco-Oakland Bay Bridge East Span Replacement Project</b>						
<b>East Span - SAS Superstructure</b>						
Capital Outlay Support	214.6	160.9	375.5	254.7	480.3	104.8
Capital Outlay Construction	1,753.7	293.1	2,046.8	1,189.8	2,097.4	50.6
<b>Total</b>	<b>1,968.3</b>	<b>454.0</b>	<b>2,422.3</b>	<b>1,444.5</b>	<b>2,577.7</b>	<b>155.4</b>
<b>SAS W2 Foundations</b>						
Capital Outlay Support	10.0	(0.8)	9.2	9.2	9.2	-
Capital Outlay Construction	26.4	-	26.4	26.5	26.4	-
<b>Total</b>	<b>36.4</b>	<b>(0.8)</b>	<b>35.6</b>	<b>35.7</b>	<b>35.6</b>	<b>-</b>
<b>YBI South/South Detour</b>						
Capital Outlay Support	29.4	61.3	90.7	85.1	90.3	(0.4)
Capital Outlay Construction	131.9	360.9	492.8	461.3	487.5	(5.3)
<b>Total</b>	<b>161.3</b>	<b>422.2</b>	<b>583.5</b>	<b>546.4</b>	<b>577.8</b>	<b>(5.7)</b>
<b>East Span - Skyway</b>						
Capital Outlay Support	197.0	(15.8)	181.2	181.2	181.2	-
Capital Outlay Construction	1,293.0	(38.9)	1,254.1	1,236.9	1,254.1	-
<b>Total</b>	<b>1,490.0</b>	<b>(54.7)</b>	<b>1,435.3</b>	<b>1,418.1</b>	<b>1,435.3</b>	<b>-</b>
<b>East Span - SAS E2/T1 Foundations</b>						
Capital Outlay Support	52.5	(24.1)	28.4	28.4	28.4	-
Capital Outlay Construction	313.5	(32.6)	280.9	274.8	280.9	-
<b>Total</b>	<b>366.0</b>	<b>(56.7)</b>	<b>309.3</b>	<b>303.2</b>	<b>309.3</b>	<b>-</b>
<b>YBI Transition Structures (see notes below)</b>						
Capital Outlay Support	78.7	27.7	106.4	36.1	117.2	10.8
Capital Outlay Construction	299.3	(93.0)	206.3	15.8	243.9	37.6
<b>Total</b>	<b>378.0</b>	<b>(65.3)</b>	<b>312.7</b>	<b>51.9</b>	<b>361.1</b>	<b>48.4</b>
<b>* YBI- Transition Structures</b>						
Capital Outlay Support			16.4	16.4	16.5	0.1
Capital Outlay Construction			-	-	-	-
<b>Total</b>			<b>16.4</b>	<b>16.4</b>	<b>16.5</b>	<b>0.1</b>
<b>* YBI- Transition Structures Contract No. 1</b>						
Capital Outlay Support			57.0	13.8	67.0	10.0
Capital Outlay Construction			144.0	15.8	169.5	25.5
<b>Total</b>			<b>201.0</b>	<b>29.6</b>	<b>236.5</b>	<b>35.5</b>
<b>* YBI- Transition Structures Contract No. 2</b>						
Capital Outlay Support			32.0	5.8	32.7	0.7
Capital Outlay Construction			59.0	-	71.1	12.1
<b>Total</b>			<b>91.0</b>	<b>5.8</b>	<b>103.8</b>	<b>12.8</b>
<b>* YBI- Transition Structures Contract No. 3 Landscape</b>						
Capital Outlay Support			1.0	-	1.0	-
Capital Outlay Construction			3.3	-	3.3	-
<b>Total</b>			<b>4.3</b>	<b>-</b>	<b>4.3</b>	<b>-</b>

## Appendix B: TBSRP (SFOBB East Span Only) AB 144/SB 66 Baseline Budget, Forecasts and Expenditures through October 30, 2010 (\$ Millions) Cont.

Contract	AB 144 / SB 66 Budget (07/2005)	Approved Changes	Current Approved Budget (10/2010)	Cost to Date (10/2010)	Cost Forecast (10/2010)	At-Completion Variance
a	c	d	e = c + d	f	g	h = g - e
<b>Oakland Touchdown (see notes below)</b>						
Capital Outlay Support	74.4	19.5	93.9	79.1	97.3	3.4
Capital Outlay Construction	283.8	4.2	288.0	209.1	280.2	(7.8)
<b>Total</b>	<b>358.2</b>	<b>23.7</b>	<b>381.9</b>	<b>288.2</b>	<b>377.5</b>	<b>(4.4)</b>
<b>*OTD Prior-to-Split Costs</b>						
Capital Outlay Support			21.7	20.1	21.7	-
Capital Outlay Construction			-	-	-	-
<b>Total</b>			<b>21.7</b>	<b>20.1</b>	<b>21.7</b>	<b>-</b>
<b>*OTD Submarine Cable</b>						
Capital Outlay Support			0.9	0.9	0.9	-
Capital Outlay Construction			9.6	7.9	9.6	-
<b>Total</b>			<b>10.5</b>	<b>8.8</b>	<b>10.5</b>	<b>-</b>
<b>*OTD No.1 (Westbound)</b>						
Capital Outlay Support			47.3	49.0	48.2	0.9
Capital Outlay Construction			212.0	201.3	203.4	(8.6)
<b>Total</b>			<b>259.3</b>	<b>250.3</b>	<b>251.6</b>	<b>(7.7)</b>
<b>*OTD No.2 (Eastbound)</b>						
Capital Outlay Support			22.5	8.4	25.0	2.5
Capital Outlay Construction			62.0	-	62.8	0.8
<b>Total</b>			<b>84.5</b>	<b>8.4</b>	<b>87.8</b>	<b>3.3</b>
<b>*OTD Electrical Systems</b>						
Capital Outlay Support			1.5	0.8	1.5	-
Capital Outlay Construction			4.4	-	4.4	-
<b>Total</b>			<b>5.9</b>	<b>0.8</b>	<b>5.9</b>	<b>-</b>
<b>Existing Bridge Demolition</b>						
Capital Outlay Support	79.7	(19.8)	59.9	0.4	61.4	1.5
Capital Outlay Construction	239.2	(0.1)	239.1	-	233.0	(6.1)
<b>Total</b>	<b>318.9</b>	<b>(19.9)</b>	<b>299.0</b>	<b>0.4</b>	<b>294.4</b>	<b>(4.6)</b>
<b>YBI/SAS Archeology</b>						
Capital Outlay Support	1.1	-	1.1	1.1	1.1	-
Capital Outlay Construction	1.1	-	1.1	1.1	1.1	-
<b>Total</b>	<b>2.2</b>	<b>-</b>	<b>2.2</b>	<b>2.2</b>	<b>2.2</b>	<b>-</b>
<b>YBI - USCG Road Relations</b>						
Capital Outlay Support	3.0	-	3.0	2.7	3.0	-
Capital Outlay Construction	3.0	-	3.0	2.8	3.0	-
<b>Total</b>	<b>6.0</b>	<b>-</b>	<b>6.0</b>	<b>5.5</b>	<b>6.0</b>	<b>-</b>
<b>YBI - Substation and Viaduct</b>						
Capital Outlay Support	6.5	-	6.5	6.4	6.5	-
Capital Outlay Construction	11.6	-	11.6	11.3	11.6	-
<b>Total</b>	<b>18.1</b>	<b>-</b>	<b>18.1</b>	<b>17.7</b>	<b>18.1</b>	<b>-</b>
<b>Oakland Geofill</b>						
Capital Outlay Support	2.5	-	2.5	2.5	2.5	-
Capital Outlay Construction	8.2	-	8.2	8.2	8.2	-
<b>Total</b>	<b>10.7</b>	<b>-</b>	<b>10.7</b>	<b>10.7</b>	<b>10.7</b>	<b>-</b>

## Appendix B: TBSRP (SFOBB East Span Only) AB 144/SB 66 Baseline Budget, Forecasts and Expenditures through October 30, 2010 (\$ Millions) Cont.

Contract	AB 144 / SB 66 Budget (07/2005)	Approved Changes	Current Approved Budget (10/2010)	Cost to Date (10/2010)	Cost Forecast (10/2010)	At-Completion Variance
a	c	d	e = c + d	f	g	h = g - e
<b>Pile Installation Demonstration Project</b>						
Capital Outlay Support	1.8	-	1.8	1.8	1.8	-
Capital Outlay Construction	9.3	(0.1)	9.2	9.2	9.3	-
<b>Total</b>	<b>11.1</b>	<b>(0.1)</b>	<b>11.0</b>	<b>11.0</b>	<b>11.1</b>	<b>-</b>
<b>Stormwater Treatment Measures</b>						
Capital Outlay Support	6.0	2.2	8.2	8.1	8.2	-
Capital Outlay Construction	15.0	3.3	18.3	16.7	18.3	-
<b>Total</b>	<b>21.0</b>	<b>5.5</b>	<b>26.5</b>	<b>24.8</b>	<b>26.5</b>	<b>-</b>
<b>Right-of-Way and Environmental Mitigation</b>						
Capital Outlay Support	-	-	-	-	-	-
Capital Outlay & Right-of-Way	72.4	-	72.4	51.3	72.4	-
<b>Total</b>	<b>72.4</b>	<b>-</b>	<b>72.4</b>	<b>51.3</b>	<b>72.4</b>	<b>-</b>
<b>Sunk Cost - Existing East Span Retrofit</b>						
Capital Outlay Support	39.5	-	39.5	39.5	39.5	-
Capital Outlay Construction	30.8	-	30.8	30.8	30.8	-
<b>Total</b>	<b>70.3</b>	<b>-</b>	<b>70.3</b>	<b>70.3</b>	<b>70.3</b>	<b>-</b>
<b>Other Capital Outlay Support</b>						
Environmental Phase	97.7	-	97.7	97.8	97.7	-
Pre-Split Project Expenditures	44.9	-	44.9	44.9	44.9	-
Non-project Specific Costs	20.0	(8.0)	12.0	3.2	12.0	-
<b>Total</b>	<b>162.6</b>	<b>(8.0)</b>	<b>154.6</b>	<b>145.9</b>	<b>154.6</b>	<b>-</b>
<b>Subtotal Capital Outlay Support</b>	<b>959.3</b>	<b>203.0</b>	<b>1,162.3</b>	<b>882.2</b>	<b>1,282.5</b>	<b>120.2</b>
<b>Subtotal Capital Outlay Construction</b>	<b>4,492.2</b>	<b>496.8</b>	<b>4,989.0</b>	<b>3,545.6</b>	<b>5,058.1</b>	<b>69.1</b>
<b>Other Budgeted Capital</b>	<b>35.1</b>	<b>(3.3)</b>	<b>31.8</b>	<b>0.7</b>	<b>7.7</b>	<b>(24.1)</b>
<b>Total SFOBB East Span Replacement Project <sup>1</sup></b>	<b>5,486.6</b>	<b>696.5</b>	<b>6,183.1</b>	<b>4,428.5</b>	<b>6,348.3</b>	<b>165.2</b>

<sup>1</sup> Figures may not sum up to totals due to rounding effects.

## Appendix C: Regional Measure 1 Program Cost Detail (\$ Millions)

Contract	AB 144 / SB 66 Budget (07/2005)	Approved Changes	Current Approved Budget (10/2010)	Cost to Date (10/2010)	Cost Forecast (10/2010)	At- Completion Variance
a	c	d	e = c + d	f	g	h = g - e
<b>New Benicia-Martinez Bridge Project</b>						
<b>New Bridge</b>						
Capital Outlay Support						
BATA Funding	84.9	6.9	91.8	91.9	91.9	0.1
Non-Bata Funding	-	0.1	0.1	0.1	0.1	-
Subtotal	84.9	7.0	91.9	92.0	92.0	0.1
Capital Outlay Construction						
BATA Funding	661.9	94.6	756.5	753.8	756.5	-
Non-Bata Funding	10.1	-	10.1	10.1	10.1	-
Subtotal	672.0	94.6	766.6	763.9	766.6	-
<b>Total</b>	<b>756.9</b>	<b>101.6</b>	<b>858.5</b>	<b>855.9</b>	<b>858.6</b>	<b>0.1</b>
<b>I-680/I-780 Interchange Reconstruction</b>						
Capital Outlay Support						
BATA Funding	24.9	5.2	30.1	30.1	30.1	-
Non-Bata Funding	1.4	5.2	6.6	6.3	6.6	-
Subtotal	26.3	10.4	36.7	36.4	36.7	-
Capital Outlay Construction						
BATA Funding	54.7	26.9	81.6	77.1	81.6	-
Non-Bata Funding	21.6	-	21.6	21.7	21.7	0.1
Subtotal	76.3	26.9	103.2	98.8	103.3	0.1
<b>Total</b>	<b>102.6</b>	<b>37.3</b>	<b>139.9</b>	<b>135.2</b>	<b>140.0</b>	<b>0.1</b>
<b>I-680/Marina Vista Interchange Reconstruction</b>						
Capital Outlay Support	18.3	1.8	20.1	20.2	20.2	0.1
Capital Outlay Construction	51.5	4.9	56.4	56.1	56.4	-
<b>Total</b>	<b>69.8</b>	<b>6.7</b>	<b>76.5</b>	<b>76.3</b>	<b>76.6</b>	<b>0.1</b>
<b>New Toll Plaza and Administration Building</b>						
Capital Outlay Support	11.9	3.8	15.7	15.7	15.7	-
Capital Outlay Construction	24.3	2.0	26.3	25.1	26.3	-
<b>Total</b>	<b>36.2</b>	<b>5.8</b>	<b>42.0</b>	<b>40.8</b>	<b>42.0</b>	<b>-</b>
<b>Existing Bridge &amp; Interchange Modifications</b>						
Capital Outlay Support						
BATA Funding	4.3	13.5	17.8	17.8	17.8	-
Non-Bata Funding	-	0.9	0.9	0.8	0.9	-
Subtotal	4.3	14.4	18.7	18.6	18.7	-
Capital Outlay Construction						
BATA Funding	17.2	32.8	50.0	37.2	50.0	-
Non-Bata Funding	-	9.5	9.5	-	9.5	-
Subtotal	17.2	42.3	59.5	37.2	59.5	-
<b>Total</b>	<b>21.5</b>	<b>56.7</b>	<b>78.2</b>	<b>55.8</b>	<b>78.2</b>	<b>-</b>
<b>Other Contracts</b>						
Capital Outlay Support	11.4	(2.3)	9.1	9.2	9.2	0.1
Capital Outlay Construction	20.3	3.3	23.6	18.1	23.6	-
Capital Outlay Right-of-Way	20.4	(0.1)	20.3	17.0	20.3	-
<b>Total</b>	<b>52.1</b>	<b>0.9</b>	<b>53.0</b>	<b>44.3</b>	<b>53.1</b>	<b>0.1</b>

## Appendix C: Regional Measure 1 Program Cost Detail (\$ Millions) Cont.

Contract	AB 144 / SB 66 Budget (07/2005)	Approved Changes	Current Approved Budget (10/2010)	Cost to Date (10/2010)	Cost Forecast (10/2010)	At- Completion Variance
a	c	d	e = c + d	f	g	h = g - e
New Benicia-Martinez Bridge Project continued...						
Subtotal BATA Capital Outlay Support	155.7	28.9	184.6	184.9	184.9	0.3
Subtotal BATA Capital Outlay Construction	829.9	164.5	994.4	967.4	994.4	-
Subtotal Capital Outlay Right-of-Way	20.4	(0.1)	20.3	17.0	20.3	-
Subtotal Non-BATA Capital Outlay Support	1.4	6.2	7.6	7.2	7.6	-
Subtotal Non-BATA Capital Outlay Construction	31.7	9.5	41.2	31.8	41.3	0.1
Project Reserves	20.8	3.6	24.4	-	24.0	(0.4)
Total New Benicia-Martinez Bridge Project						
Notes:	Includes EA's 00601_,00603_,00605_,00606_,00608_,00609_,0060A_,0060C_,0060E_,0060F_,0060G_,0060H_, and all Project Right-of-Way					
Carquinez Bridge Replacement Project						
New Bridge						
Capital Outlay Support	60.5	(0.3)	60.2	60.2	60.2	-
Capital Outlay Construction	253.3	2.7	256.0	255.9	256.0	-
Total	313.8	2.4	316.2	316.1	316.2	-
Crockett Interchange Reconstruction						
Capital Outlay Support	32.0	(0.1)	31.9	31.9	31.9	-
Capital Outlay Construction	73.9	(1.9)	72.0	71.9	72.0	-
Total	105.9	(2.0)	103.9	103.8	103.9	-
Existing 1927 Bridge Demolition						
Capital Outlay Support	16.1	(0.5)	15.6	15.7	15.7	0.1
Capital Outlay Construction	35.2	-	35.2	34.8	35.2	-
Total	51.3	(0.5)	50.8	50.5	50.9	0.1
Other Contracts						
Capital Outlay Support	15.8	1.2	17.0	16.4	17.0	-
Capital Outlay Construction	18.8	(1.2)	17.6	16.3	17.6	-
Capital Outlay Right-of-Way	10.5	(0.1)	10.4	9.9	10.4	-
Total	45.1	(0.1)	45.0	42.6	45.0	-
Subtotal BATA Capital Outlay Support						
Subtotal BATA Capital Outlay Construction	124.4	0.3	124.7	124.2	124.8	0.1
Subtotal Capital Outlay Right-of-Way	381.2	(0.4)	380.8	378.9	380.8	-
Project Reserves	10.5	(0.1)	10.4	9.9	10.4	-
	12.1	(9.8)	2.3	-	2.2	(0.1)
Total Carquinez Bridge Replacement Project <sup>1</sup>						
Notes	Other Contracts include EA's 01301_,01302_,01303_,01304_,01305_,01306_,01307_,01308_,01309_,0130A_,0130C_,0130D_,0130F_,0130G_,0130H_,0130J_,00453_,00493_,04700_,00607_,2A270_,and 29920_ and all Project Right-of-Way					

<sup>1</sup> Figures may not sum up to totals due to rounding effects.

## Appendix C: Regional Measure 1 Program Cost Detail (\$ Millions) Cont.

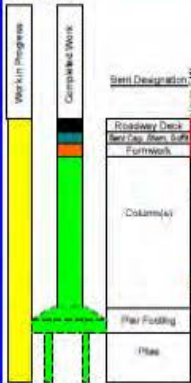
Contract	AB 144 / SB 66 Budget (07/2005)	Approved Changes	Current Approved Budget (10/2010)	Cost to Date (10/2010)	Cost Forecast (10/2010)	At- Completion Variance
a	c	d	e = c + d	f	g	h = g - e
<b>Richmond-San Rafael Bridge Trestle. Fender, and Deck Joint Rehabilitation</b> S						
Capital Outlay Support						
BATA Funding	2.2	(0.8)	1.4	1.4	1.4	-
Non-BATA Funding	8.6	1.8	10.4	10.4	10.4	-
Subtotal	10.8	1.0	11.8	11.8	11.8	-
Capital Outlay Construction						
BATA Funding	40.2	(6.8)	33.4	33.3	33.4	-
Non-BATA Funding	51.1	-	51.1	51.1	51.1	-
Subtotal	91.3	(6.8)	84.5	84.4	84.5	-
Project Reserves	-	0.8	0.8	-	0.8	-
<b>Total</b>	<b>102.1</b>	<b>(5.0)</b>	<b>97.1</b>	<b>96.2</b>	<b>97.1</b>	<b>-</b>
<b>Richmond-San Rafael Bridge Deck Overlay Rehabilitation</b>						
Capital Outlay Support						
BATA Funding	4.0	(0.7)	3.3	3.3	3.3	-
Non-BATA Funding	4.0	(4.0)	-	-	-	-
Subtotal	8.0	(4.7)	3.3	3.3	3.3	-
Capital Outlay Construction	16.9	(0.6)	16.3	16.3	16.3	-
Project Reserves	0.1	0.3	0.4	-	0.4	-
<b>Total</b>	<b>25.0</b>	<b>(5.0)</b>	<b>20.0</b>	<b>19.6</b>	<b>20.0</b>	<b>-</b>
<b>Richmond Parkway Project (RM 1 Share Only)</b>						
Capital Outlay Support	-	-	-	-	-	-
Capital Outlay Construction	5.9	-	5.9	4.3	5.9	-
<b>Total</b>	<b>5.9</b>	<b>-</b>	<b>5.9</b>	<b>4.3</b>	<b>5.9</b>	<b>-</b>
<b>San Mateo-Hayward Bridge Widening</b>						
Capital Outlay Support	34.6	(0.5)	34.1	34.1	34.1	-
Capital Outlay Construction	180.2	(6.1)	174.1	174.1	174.1	-
Capital Outlay Right-of-Way	1.5	(0.9)	0.6	0.5	0.6	-
Project Reserves	1.5	(0.5)	1.0	-	1.0	-
<b>Total</b>	<b>217.8</b>	<b>(8.0)</b>	<b>209.8</b>	<b>208.7</b>	<b>209.8</b>	<b>-</b>
<b>I-880/SR-92 Interchange Reconstruction</b>						
Capital Outlay Support	28.8	34.6	63.4	55.4	63.4	-
Capital Outlay Construction						
BATA Funding	85.2	66.2	151.4	109.2	151.4	-
Non-BATA Funding	9.6	-	9.6	-	9.6	-
Subtotal	94.8	66.2	161.0	109.2	161.0	-
Capital Outlay Right-of-Way	9.9	7.0	16.9	12.7	16.9	-
Project Reserves	0.3	3.4	3.7	-	3.7	-
<b>Total</b>	<b>133.8</b>	<b>111.2</b>	<b>245.0</b>	<b>177.3</b>	<b>245.0</b>	<b>-</b>
<b>Bayfront Expressway Widening</b>						
Capital Outlay Support	8.6	(0.2)	8.4	8.3	8.4	-
Capital Outlay Construction	26.5	(1.5)	25.0	24.9	25.0	-
Capital Outlay Right-of-Way	0.2	-	0.2	0.2	0.2	-
Project Reserves	0.8	(0.3)	0.5	-	0.5	-
<b>Total</b>	<b>36.1</b>	<b>(2.0)</b>	<b>34.1</b>	<b>33.4</b>	<b>34.1</b>	<b>-</b>

## Appendix C: Regional Measure 1 Program Cost Detail (\$ Millions) Cont.

Contract	AB 144 / SB 66 Budget (07/2005)	Approved Changes	Current Approved Budget (10/2010)	Cost to Date (10/2010)	Cost Forecast (10/2010)	At- Completion Variance
a	c	d	e = c + d	f	g	h = g - e
<b>US 101/University Avenue Interchange Modification</b>						
Capital Outlay Support	-	-	-	-	-	-
Capital Outlay Construction	3.8	-	3.8	3.7	3.8	-
Total	3.8	-	3.8	3.7	3.8	-
<b>Subtotal BATA Capital Outlay Support</b>	358.3	61.6	419.9	411.6	420.3	0.4
<b>Subtotal BATA Capital Outlay Construction</b>	1,569.8	215.3	1,785.1	1,712.1	1,785.1	-
<b>Subtotal Capital Outlay Right-of-Way</b>	42.5	5.9	48.4	40.3	48.4	-
<b>Subtotal Non-BATA Capital Outlay Support</b>	14.0	4.0	18.0	17.6	18.0	-
<b>Subtotal Non-BATA Capital Outlay Construction</b>	92.4	9.5	101.9	82.9	102.0	0.1
Project Reserves	35.6	(2.5)	33.1	-	32.6	(0.5)
Total RM1 Program	2,112.6	293.8	2,406.4	2,264.5	2,406.4	-
Notes:						
1 Richmond-San Rafael Bridge Trestle, Fender, and Deck Joint Rehabilitation Includes Non-TBSRA Expenses for EA 0438U_ and 04157_						
2 San Mateo-Hayward Bridge Widening includes EA's 00305_,04501_,04503_,04504_, 04504_,04505_,04506_,04507_,04508_,04509_,27740_,27790_,04860_						

**SFOB SEISMIC RETROFIT PROJECT**  
**THE YBITS PROGRESS DIAGRAM**  
 (As of October 28, 2010)

**Legend**



SSD Contract (CC Myers)

YBITS Contract (MCM)

- Note:
1. W10AL, W10L, W1L, W6L, W7L & W8L all have North and South Columns.
  2. EB On Ramp Structure is not included in this Diagram.



Column W10L North



Access Trestle Construction



Note: Col & Footing for 10L South was placed on 10-27-10 and W10L-North was placed on 10-28-10



Column 10W L South



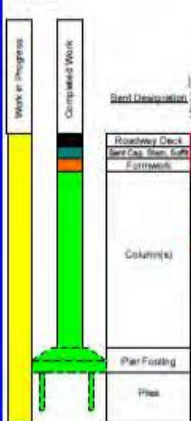
MCM Stored Piles at YBI



Ground Preparation for Additional Parking spaces

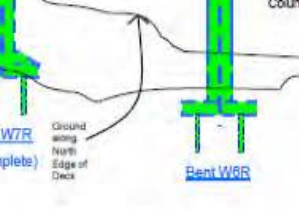


**Legend**

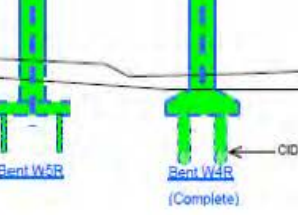


Note: Col & Footing for 10L South was placed on 10-27-10 and W10L-North was placed on 10-28-10

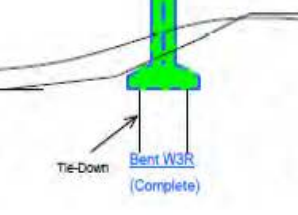
Column 10W L South



MCM Stored Piles at YBI



Ground Preparation for Additional Parking spaces



Bridge Hinge K

Bent W2 (SAS Project)

## Appendix E: Project Progress Photographs

### Self-Anchored Suspension Bridge Fabrication



SAS Cross Beam Assembly in Bay 6



SAS Lift 13 West Line Segment Assembly in Bay 14



SAS Tower Lift 3 Segments Loaded up on the Ship



SAS ESAB Wire Being Used for the First Time on Lift 11 Welds

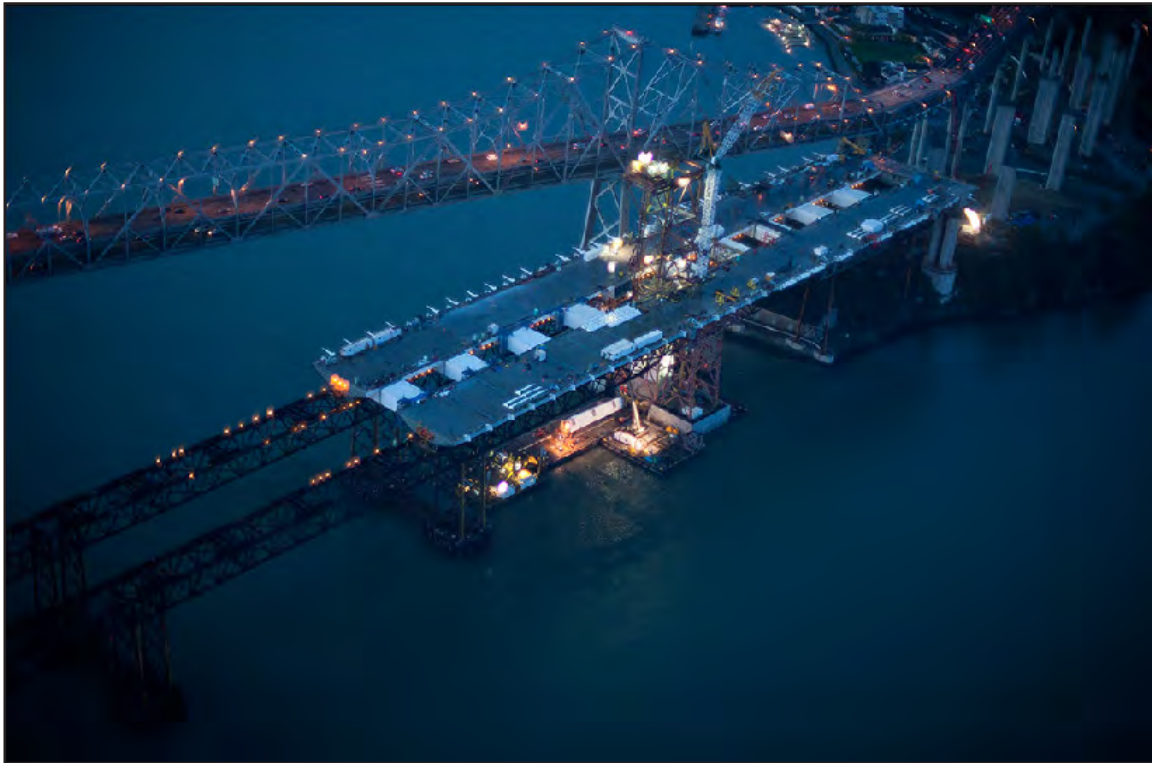




Aerial View of Yerba Buena Island Detour and the Yerba Buena Island Transition Structures #1

## Appendix E: Project Progress Photographs

### Self-Anchored Suspension Bridge Field Work



SAS Aerial View of the Shear-Leg Crane Barge Erecting the Tower Lifts



SAS Bike Path Fabrication



SAS Second Tower Lift

## Appendix E: Project Progress Photographs

### 92/880 Interchange



GRE Work in Progress at Southwest Quadrant of the 92/880 Interchange



Bent 3 of WSCONN Bridge



92/880 Interchange Progress



Drainage Works on the Old Hesperian Off Ramp

## Appendix F: Glossary of Terms

### Glossary of Terms

**AB144/SB 66 BUDGET:** The planned allocation of resources for the Toll Bridge Seismic Retrofit Program, or subordinate projects or contracts, as provided in Assembly Bill 144 and Senate Bill 66, signed into law by Governor Schwarzenegger on July 18, 2005 and September 29, 2005, respectively.

**BATA BUDGET:** The planned allocation of resources for the Regional Measure 1 Program, or subordinate projects or contracts as authorized by the Bay Area Toll Authority as of June 2005.

**APPROVED CHANGES:** For cost, changes to the AB144/SB 66 Budget or BATA Budget as approved by the Bay Area Toll Authority Commission. For schedule, changes to the AB 144/SB 66 Project Complete Baseline approved by the Toll Bridge Program Oversight Committee, or changes to the BATA Project Complete Baseline approved by the Bay Area Toll Authority Commission.

**CURRENT APPROVED BUDGET:** The sum of the AB144/SB66 Budget or BATA Budget and Approved Changes.

**COST TO DATE:** The actual expenditures incurred by the program, project or contract as of the month and year shown.

**COST FORECAST:** The current forecast of all of the costs that are projected to be expended so as to complete the given scope of the program, project, or contract.

**AT COMPLETION VARIANCE or VARIANCE (cost):** The mathematical difference between the Cost Forecast and the Current Approved Budget.

**AB 144/SB 66 PROJECT COMPLETE BASELINE:** The planned completion date for the Toll Bridge Seismic Retrofit Program or subordinate projects or contracts.

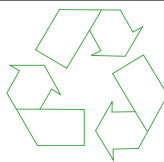
**BATA PROJECT COMPLETE BASELINE:** The planned completion date for the Regional Measure 1 Program or subordinate projects or contracts.

**PROJECT COMPLETE CURRENT APPROVED SCHEDULE:** The sum of the AB144/SB66 Project Complete Baseline or BATA Project Complete Baseline and Approved Changes.

**PROJECT COMPLETE SCHEDULE FORECAST:** The current projected date for the completion of the program, project, or contract.

**SCHEDULE VARIANCE or VARIANCE (schedule):** The mathematical difference expressed in months between the Project Complete Schedule Forecast and the Project Complete Current Approved Schedule.

**% COMPLETE:** % Complete is based on an evaluation of progress on the project, expenditures to date, and schedule.



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*The information in this report is provided in accordance with California Government code Section 755. This document is one of a series of reports prepared for the Bay Area Toll Authority (BATA)/Metropolitan Transportation Commission (MTC) for the Toll Bridge Seismic Retrofit and Regional Measure 1 Programs. The contract value for the monitoring efforts, technical analysis, and field site works that contribute to these reports, as well as the report preparation and production is \$1,574,873.73.*







## *Memorandum*

**TO:** Toll Bridge Program Oversight Committee (TBPOC)      **DATE:** December 1, 2010

**FR:** Dina Noel, Assistant Deputy Director Toll Bridge Program, CTC

**RE:** Agenda No. - 3c  
Item- Yerba Buena Island Transition Structure (YBITS) Contract Change  
Order No. 33-S0 & S1 – Hinge W6R & W7L Modular Seismic Joints

---

**Recommendation:**

**APPROVAL**

**Cost:**

CCO 33-S0 & S1: \$1,750,000.00 (Not To Exceed)

**Schedule Impacts:**

No Anticipated Impacts

**Discussion:**

**CCO 33-S0 & S1 in the amount not to exceed \$1,750,000** is necessary to substitute the planned steel deck plate seismic joints with modular joints at the two hinges between Frame 1 and 2 of the eastbound and westbound structures.

The as-planned joints consisted of 2 separate steel plates which would allow seismic movement by having one plate slide on top of the other plate. The modular joints consist of 11 separate steel beams joined together to allow for seismic expansion in an accordion like fashion. The substitution of the modular joints should provide for improved seismic characteristics for the YBITS structure.

Change Order No. 33-S0 shall provide for the fabrication of the modular joints and the elimination of the as-planned deck joints at a cost of \$1,125,040. Change Order No. 33-S1 shall be issued subsequently to provide for the installation of the modular joints. The total combined cost of CCO No. 33-S0 and CCO No. 33-S1 is not anticipated to exceed \$1,750,000.

The new SFOBB east span calls for 6 seismic joints to be installed on the YBITS1 contract and 2 on the SAS contract. An additional 7 joints are anticipated to be provided for the OTD1 contract under YBITS1. A progress update on the status of the design modifications on these 15 joints is attached.

## *Memorandum*

Attachment(s):

1. Draft CCO: 33-S0
2. Draft CCO Memorandum: 33-S0
3. SFOBB Seismic Joint – Progress Update
4. YBI Transition Structures 1 Contract 04-0120S4, Budget Analysis, Sep 30, 2010

**CONTRACT CHANGE ORDER**

Change Requested by: Engineer

CCO: 33	Suppl. No. 0	Contract No. 04 - 0120S4	Road SF-80-12.7/13.2	FED. AID LOC.: NO FED AID
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**To: M C M CONSTRUCTION INC**

You are directed to make the following changes from the plans and specifications or do the following described work not included in the plans and specifications for this contract. **NOTE: This change order is not effective until approved by the Engineer.**

Description of work to be done, estimate of quantities and prices to be paid. (Segregate between additional work at contract price, agreed price and force account.) Unless otherwise stated, rates for rental of equipment cover only such time as equipment is actually used and no allowance will be made for idle time. This last percentage shown is the net accumulated increase or decrease from the original quantity in the Engineer's Estimate.

Provide for the following changes pertaining to the seismic joints at Hinges W7LA and W6RB of the Yerba Buena Island Transition Structure (Br. No. 34-0006 L/R):

- 1) Eliminate the planned steel deck plate joints (Seismic Joint (Type II)).
- 2) Furnish and install modular joints and modify the hinge details accordingly as specified on Sheets No. 3 through 12 of this change order and as shown on Sheets No. 13 through 25 (Revised Contract Plan Sheets No. 551, 552, 587, 660 through 666, 685, 695 and 696 of 806) of this change order.

Seismic Joint (Type II) details, as shown on Contract Plan Sheets No. 697 through 705, shall not apply to the modular joints pertaining to this change order.

**Estimate of Decrease in Contract Item at Contract Price:**

Item No. 105: SEISMIC JOINT (HINGE W7LA)				
-1 LS	(-100.00%)	@\$225,000.00 /LS	=	-\$225,000.00 (-100.00%)
Item No. 108: SEISMIC JOINT (HINGE W6RB)				
-1 LS	(-100.00%)	@\$225,000.00 /LS	=	-\$225,000.00 (-100.00%)

Estimated total cost for Decrease in Contract Item.....(\$450,000.00)

(No adjustment for eliminated bid item clause)

**Extra Work at Lump Sum:**

Provide compensation to the Contractor for all costs associated with furnishing the modular joints for Hinges W7LA and W6RB as specified under this change order.

For the costs, the Contractor shall be compensated an agreed lump sum of \$1,575,040.00 which constitutes full and final compensation, including all markups, for all additional costs incurred in furnishing the modular joints as defined by this change order.

Compensation provided under this change order includes all costs associated with the design and fabrication of the modular joint seal assemblies including submittal of working drawings, proof testing of assemblies (including components of assemblies), inspection and installation consultation by a qualified representative of the manufacturer at the job-site during installation of all assemblies, final inspection by the manufacturer of installed assemblies, quality control for final products and the product warranty as specified under this change order. Compensation also includes the transporting of the joints to the project site.

Except for the inspection and installation consultation required to be provided by the joint manufacturer as specified under this change order, any costs pertaining to the installation and jobsite storage of the modular joints and any costs associated with the modifications to the hinge details provided under this change order shall be deferred and shall be provided under a supplemental change order.

There shall be no reduction in compensation, as defined under Section 55-4.02 "Payment" of the Contract Standard Specifications, for additional shop inspection expenses sustained by the State should any modular joint fabrication shop be located more than 480 air line kilometers or 4,800 air line kilometers from Sacramento and Los Angeles.

**CONTRACT CHANGE ORDER**

Change Requested by: Engineer

CCO: 33	Suppl. No. 0	Contract No. 04 - 0120S4	Road SF-80-12.7/13.2	FED. AID LOC.: NO FED AID
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Estimated cost of Extra Work at Lump Sum .....\$1,575,040.00

Consideration of a time adjustment will be deferred until completion of the work specified in this contract change order. A determination of a time extension will be made in accordance with Section 8-1.07, "Liquidated Damages," of the Standard Specifications.

Estimated Cost: Increase ☒ Decrease ☐ \$1,125,040.00

By reason of this order the time of completion will be adjusted as follows: Deferred

**Submitted by**

Signature	Resident Engineer Rajesh Oberoi, Senior R.E.	Date
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**Approval Recommended by**

Signature	Principal T.E. Mike Forner	Date
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**Engineer Approval by**

Signature	Principal T.E. Mike Forner	Date
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We the undersigned contractor, have given careful consideration to the change proposed and agree, if this proposal is approved, that we will provide all equipment, furnish the materials, except as may otherwise be noted above, and perform all services necessary for the work above specified, and will accept as full payment therefor the prices shown above.

**NOTE: If you, the contractor, do not sign acceptance of this order, your attention is directed to the requirements of the specifications as to proceeding with the ordered work and filing a written protest within the time therein specified.**

**Contractor Acceptance by**

Signature	(Print name and title)	Date
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**CONTRACT CHANGE ORDER MEMORANDUM**

DATE: 11/29/2010 Page 1 of 2

TO: Deanna Vilcheck, ACM /			FILE: <b>E.A.</b> 04 - 0120S4	
FROM: Rajesh Oberoi, Senior R.E.			<b>CO-RTE-PM</b> SF-80-12.7/13.2	
			<b>FED. NO.</b> NO FED AID	
CCO#: <b>33</b>	SUPPLEMENT#: <b>0</b>	Category Code: <b>CHPT</b>	CONTINGENCY BALANCE (incl. this change) <b>\$23,606,475.00</b>	
COST: <b>\$1,125,040.00</b>			INCREASE <input checked="" type="checkbox"/> DECREASE <input type="checkbox"/>	
SUPPLEMENTAL FUNDS PROVIDED: <b>\$0.00</b>			HEADQUARTERS APPROVAL REQUIRED? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	
			IS THIS REQUEST IN ACCORDANCE WITH ENVIRONMENTAL DOCUMENTS? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	
<b>CCO DESCRIPTION:</b> W7LA & W6RB Seismic Joints			<b>PROJECT DESCRIPTION:</b> YBITS-1 (Yerba Buena Island Transition Structures)	
Original Contract Time: <b>1390</b> Day(s)	Time Adj. This Change: <b>DEF</b> Day(s)	Previously Approved CCO Time Adjustments: <b>0</b> Day(s)	Percentage Time Adjusted: (including this change) <b>0</b> %	Total # of Unreconciled Deferred Time CCO(s): (including this change) <b>7</b>

**THIS CHANGE ORDER PROVIDES FOR:**

The substitution of modular deck joints in lieu of the planned steel plate deck joints at two hinges of the mainline structure.

This project, the Yerba Buena Island Transition Structure (YBITS), provides for the construction of two bridges which will connect eastbound and westbound traffic on the new east span of the San Francisco Oakland Bay Bridge (SFOBB) to the existing Yerba Buena Island (YBI) tunnel. The structures are comprised of concrete box girder bridges each approximately 26 meters wide, 40 meters high and 450 meters in length.

Both the eastbound and westbound structures consist of 2 frames. The contract plans call for the steel deck plates with channel assemblies to function as seismic joints at the hinges between these frames. These deck plates consist of a cover plate attached to one end of the hinge, a deck plate attached adjacent to the cover plate that spans the hinge and a support plate with is attached to the other side of the hinge which supports the free end of the deck plate.

Mike Whiteside the YBI Coordination Engineer has issued a request to substitute modular deck joints for the planned deck plate joints This change order provides for the requested substitution.

The modular deck joints will consist of 11 steal separation beams each spanning the 26 meter width of the bridge with the gaps between these beams sealed with a continuous advanced neoprene or similar material. Fabrication costs associated with these joints are considerably higher than the as-planned plate joints. Fabrication costs include the design of the joint which will be based off of the plans and specification provided and approved by the engineer through the shop drawing process.

Installation of the joints shall also be considerably higher than the as-planned plate joint. The plate joints were considerably lighter and called for two plates to be installed separately along each traffic lane. The modular joints, much heavier per meter in length, will be installed as one continuous unit across the 26 meter width of the bridge. Additional modifications to the hinges are also required to provide for the revised seismic joint being installed.

The as-planned plate deck joints shall be accounted for by eliminating the 2 lump sum contract bid items providing for furnishing and installing these joints resulting in a credit of \$450,000.00. Compensation for furnishing the 2 modular deck joints will be paid as extra work at an agreed lump sum of \$1,575,040.00. The net change order cost of \$1,125,040.00 shall be financed from the contract's contingency funds. A detailed cost analysis is on file.

Any costs pertaining to the installation and jobsite storage of the modular joints and any costs associated with the modifications to the hinge details provided under this change order shall be deferred and shall be provided under a supplement to this change order. These costs are anticipated not to exceed \$600,000.

Adjustment of contract time is deferred as the work may affect the controlling operation.

\_\_\_\_\_ from District Office, Maintenance concurred with this change on December xx, 2010. A copy of the concurrence is on file in the project records.

**CONTRACT CHANGE ORDER MEMORANDUM**

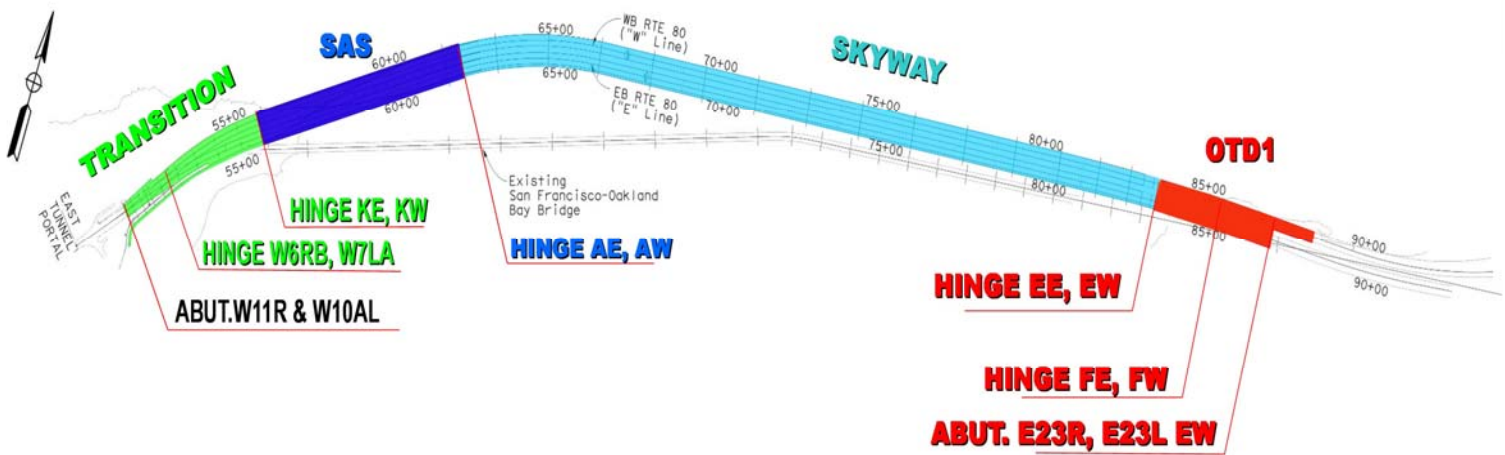
EA: 0120S4 CCO: 33 - 0

DATE: 11/29/2010 Page 2 of 2

<b>CONCURRED BY:</b>			<b>ESTIMATE OF COST</b>										
Construction Engineer: Rajesh Oberoi	Date		THIS REQUEST	TOTAL TO DATE									
Bridge Engineer: Mehran Ardakanian	Date		ITEMS (\$450,000.00)		(\$450,000.00)								
Project Engineer:	Date		FORCE ACCOUNT \$0.00		\$0.00								
Project Manager:	Date		AGREED PRICE \$1,575,040.00		\$1,575,040.00								
FHWA Rep.:	Date		ADJUSTMENT \$0.00		\$0.00								
Environmental:	Date		<b>TOTAL</b> \$1,125,040.00		\$1,125,040.00								
Other (specify):	Date		<b>FEDERAL PARTICIPATION</b>										
Other (specify):	Date		<input checked="" type="checkbox"/> PARTICIPATING <input type="checkbox"/> PARTICIPATING IN PART <input checked="" type="checkbox"/> NONE <input type="checkbox"/> NON-PARTICIPATING (MAINTENANCE) <input type="checkbox"/> NON-PARTICIPATING										
District Prior Approval By: Larry Salhaney	Date		FEDERAL SEGREGATION (if more than one Funding Source or P.I.P. type)										
HQ (Issue / Approve) By:	Date		<input checked="" type="checkbox"/> CCO FUNDED PER CONTRACT <input type="checkbox"/> CCO FUNDED AS FOLLOWS										
Resident Engineer's Signature:	Date		<table border="0"> <tr> <td>FEDERAL FUNDING SOURCE</td> <td>PERCENT</td> </tr> <tr> <td>_____</td> <td>_____</td> </tr> <tr> <td>_____</td> <td>_____</td> </tr> <tr> <td>_____</td> <td>_____</td> </tr> </table>			FEDERAL FUNDING SOURCE	PERCENT	_____	_____	_____	_____	_____	_____
FEDERAL FUNDING SOURCE	PERCENT												
_____	_____												
_____	_____												
_____	_____												

# SFOBB EAST SPAN SEISMIC SAFETY PROJECT SEISMIC JOINTS – PROGRESS UPDATE

December 6, 2010



ABUT. W11R & W10AL - \$91,380

**YBITS1 CCO No. 7** – CCO issued to modify the riding surface texture pattern.

HINGE W6RB & W7LA - \$1,750,000 (Not to Exceed Cost)

**YBITS1 CCO No. 33** - Replace original plan tapered plate joints with DS Brown Modular Deck Joints. Fabrication CCO pending December 2010 TBPOC approval.

HINGE KE & KW - \$2,000,000 (Estimated Cost)

**YBITS1 CCO No. TBD** - Flat Plate Joint in the process of Plans and Specifications for CCO for YBITS. It will be very similar to Hinge A design (Original plan was tapered plate joint). Flat Plate Joints will be at the east and west end of SAS. Hinge K will be similar to Hinge A and is being designed by the JV now.

HINGE AE & AW - \$1,500,000 (Estimated Cost)

**SAS CCO No. 25** - Plans provided to Construction for modified deck plate joints. Fabrication to begin Dec. 2010.

HINGE EE & EW - \$1,600,000 (Estimated Cost)

**YBITS1 CCO No. TBD** - Modular joint needs to be modified to fit the existing block outs. Joint Venture has been directed to pursue this. (Original plan was tapered plate joint). Joint Venture is in discussion with DS Brown to adjust the blockouts and/or modify the joint to fit.

HINGE FE & FW - \$1,600,000 (Estimated Cost)

**YBITS1 CCO No. TBD** - Modular joint fits with only minor modification at block out (remove about 1" cover over the steel to be replaced with grout). Joint Venture is in discussion with DS Brown to adjust the blockouts and/or modify the joint to fit.

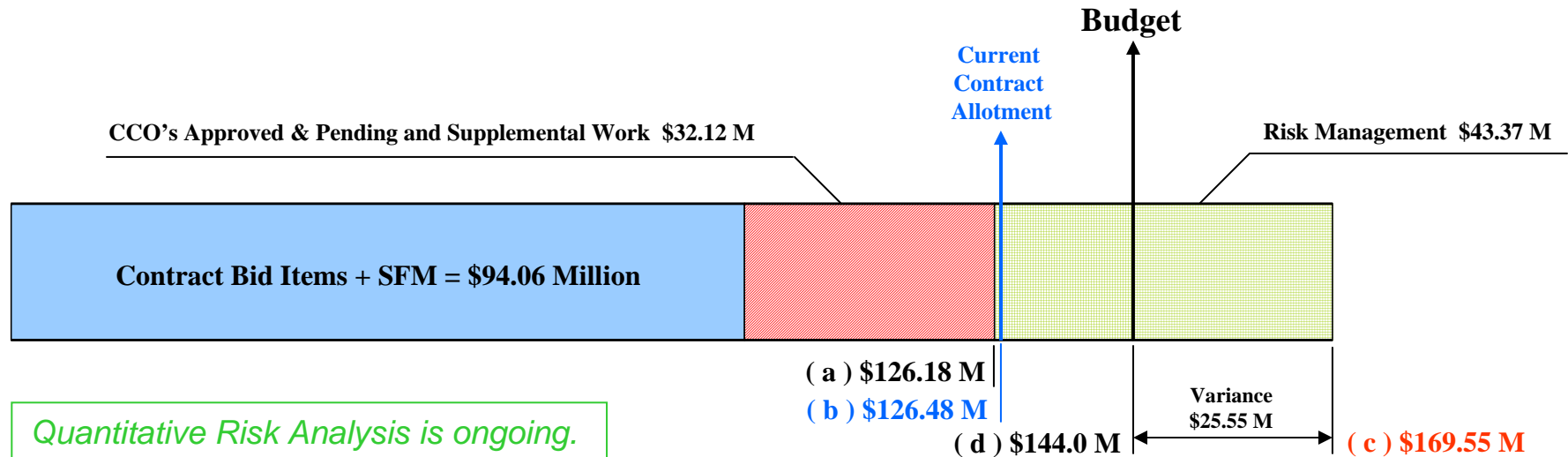
ABUT. E23L & E23R – \$1,500,000 (Estimated Cost)

**YBITS1 CCO No. TBD** - Original steel deck plate joint needs no modifications except to change riding surface texture. Flat Plate Joints will be at the east abutment of OTD (E23R).

# YBI Transition Structures 1 Contract 04-0120S4

## Budget Analysis

September 30, 2010



**Contract 04-0120S4 YBI Transition Structures 1**  
**Current Contract Budget Funding Status**  
 September 30, 2010 Basis

**Contract 04-0120S4 YBI Transition Structures 1**  
**Contract Forecast At Completion (FAC) & Variance**  
 September 30, 2010 Basis

Contract Items	\$	80,775,457
State Furnished Materials (SFM)	\$	13,288,501
Subtotal	\$	94,063,958
Supplemental Work	\$	20,917,500
Contingency At 10%	\$	11,498,542
Subtotal Original Contract Allotment	\$	126,480,000
Supplemental Budget Allocation Approved	\$	-
Subtotal Current Contract Allotment	\$	126,480,000 ( b )
Remaining Unallotted Budget (Current Contract Budget - Current Contract Allotment)	\$	17,520,000
Total Current Contract Budget	\$	144,000,000 ( d )

Contract Items	\$	80,775,457
State Furnished Materials (SFM)	\$	13,288,501
Subtotal	\$	94,063,958
Supplemental Work Remaining	\$	19,086,408
CCO's		
CCO's (Approved ( 8 ) + Pending ( 33 ) = Total ( 41 ) )	\$	4,326,440
CCO's = or > \$1 Million Approved ( 2 )	\$	8,700,000
Subtotal	\$	126,176,806 ( a )
Risk Management Cost - Q3 2010 50% Probable	\$	43,371,000
Q3 2010 Total	\$	169,547,806 ( c )

Reported Total Forecast At Completion \$ 164,300,000  
 In 2nd Quarter 2010 TBSRP Report

Variance ( Total - Current Budget ) \$ 25,547,806

Confidential Draft – For Deliberative Purpose Only

## *Memorandum*

**TO:** Toll Bridge Program Oversight Committee (TBPOC)      **DATE:** December 1, 2010

**FR:** Tony Anziano, Toll Bridge Program Manager, Caltrans

**RE:** Agenda No. - 4a1

Item- San Francisco-Oakland Bay Bridge Updates  
Yerba Buena Island Transition Structures No. 1 Update

---

**Recommendation:**

For Information Only

**Cost:**

N/A

**Schedule Impacts:**

N/A

**Discussion:**

A verbal update on the Yerba Buena Island Transition Structures No. 1 contract will be provided at the December 9<sup>th</sup> meeting.

**Attachment(s):**

N/A

- Item 4b: Oakland Touchdown No. 2**
- 1) Detour and Staging Concept Update  
(to be sent under separate cover)**

## *Memorandum*

**TO:** Toll Bridge Program Oversight Committee (TBPOC)      **DATE:** December 1, 2010

**FR:** Brian Maroney, Deputy Toll Bridge Program Manager, Caltrans  
Steven Hulsebus, Design Manager, Caltrans

**RE:** Agenda No. - 4c  
Item- San Francisco-Oakland Bay Bridge Updates  
Conceptual Design Options for Bicycle-Pedestrian Access to YBI at  
SFOBB Seismic Safety Opening

---

**Recommendation:**

For Information Only

**Cost:**

N/A

**Schedule Impacts:**

NA

**Discussion:**

This memo updates the PMT and the TBPOC on the requested work to develop a plan to allow for bicycle-pedestrian access to YBI at the time of seismic safety opening of the new SFOBB East Span. Although there are many variations, this memo presents the two fundamental alternatives/options of carrying a bicycle-pedestrian facility to YBI. The two fundamental options are 1) carry the facility along the SAS permanent bicycle-pedestrian path westward to about the SAS tower and then extend the facility onto the SAS and YBI transition structure's southern most shoulder until the bike-pedestrian path transitions onto the ground on YBI on a small temporary structure adjacent to, or on a widening of the planned temporary eastbound onramp, or 2) carry the facility along the SAS permanent bicycle-pedestrian path westward to about the SAS tower and then gradually lower the elevation of the facility via modifications to the SAS to below the bottom of the SAS structure and extend it west and north onto an additional structure supported off the SAS until overland and then onto a separate structure on YBI. It is important to emphasize that many variations of these fundamental alternatives can be developed, but they all possess the same fundamental elements and major parameters.

## *Memorandum*

Important issues to discuss and receive input/direction from the TBPOC include:

- 1) different values of different perspectives as to the reasons/justifications for the access on opening day and continuously after opening day;
- 2) the level of acceptable risk associated with bicycles and pedestrians temporarily on a shoulder behind k-rail on such a highly traveled route; and
- 3) if an additional significant structure is appropriately acceptable.

Staff is seeking input that would allow for future work to be focused on alternatives that are of interest to the TBPOC and cull alternatives early that are not of interest to the TBPOC, which will use limited COS resources wisely.

**Attachment(s):**

Bikes2YBI PowerPoint Presentation



# **Attachment A**

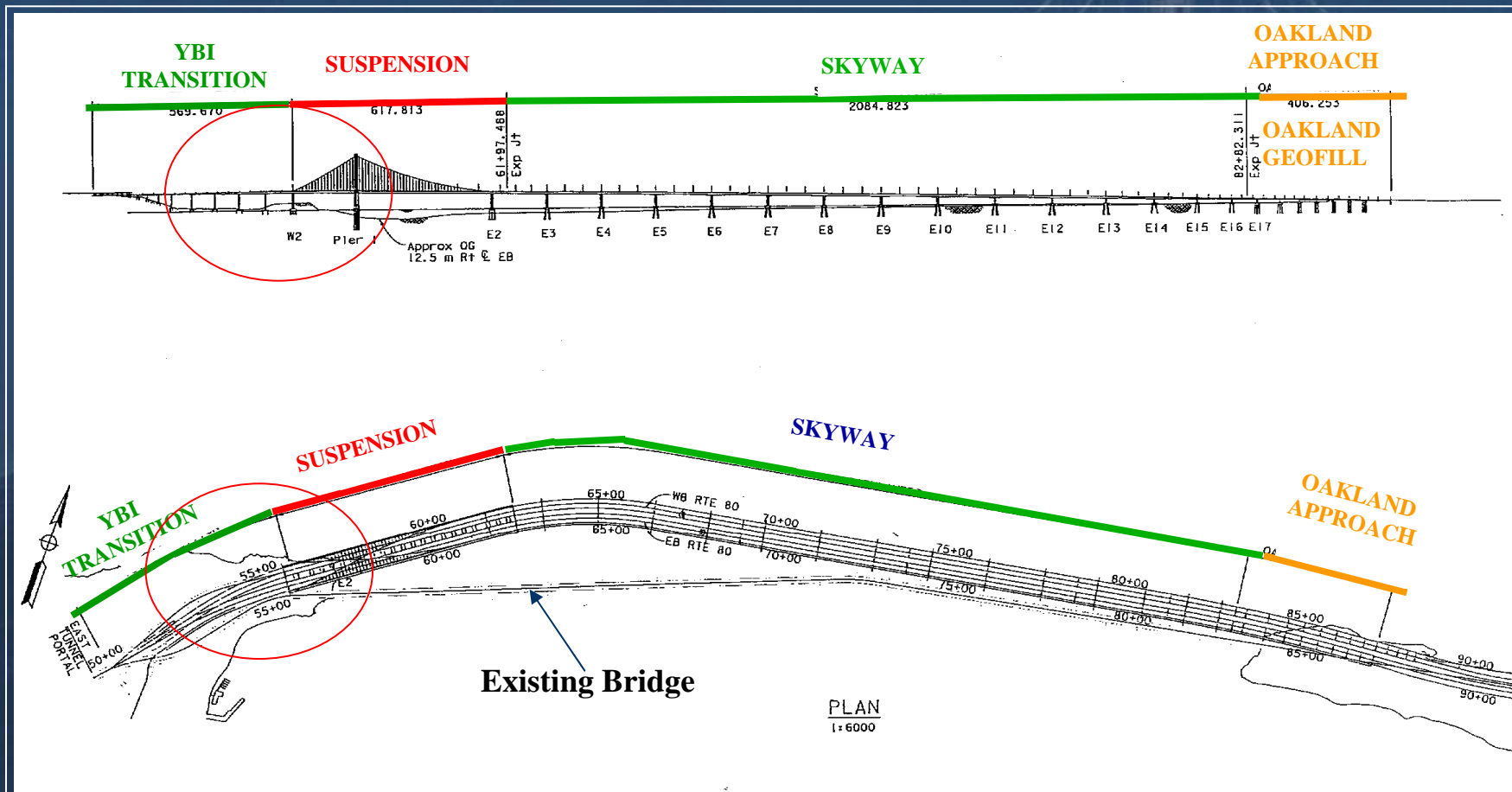
## **Conceptual Design Options for bicycle- pedestrian access onto YBI on the day of SFOBB Seismic Safety Opening**



THE SAN FRANCISCO-OAKLAND  
**BAY BRIDGE**  
SEISMIC SAFETY PROJECT

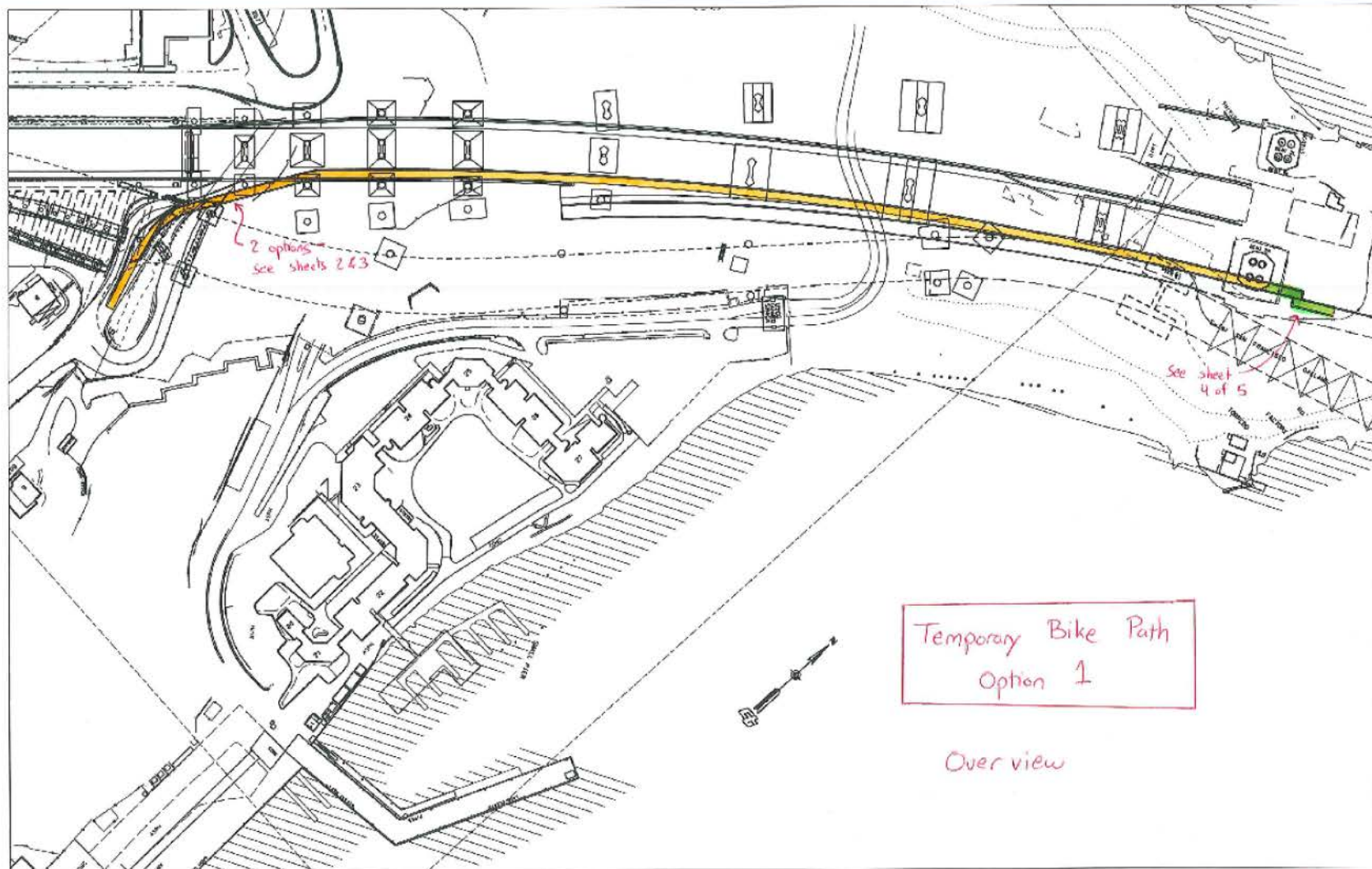
CALTRANS BAY AREA TOLL AUTHORITY CALIFORNIA TRANSPORTATION COMMISSION

# SFOBB East Span Segments



THE SAN FRANCISCO-OAKLAND  
**BAY BRIDGE**  
SEISMIC SAFETY PROJECT

CALTRANS BAY AREA TOLL AUTHORITY CALIFORNIA TRANSPORTATION COMMISSION



Temporary YBI Bike Path.dgn 11/17/2010 2:19:34 PM

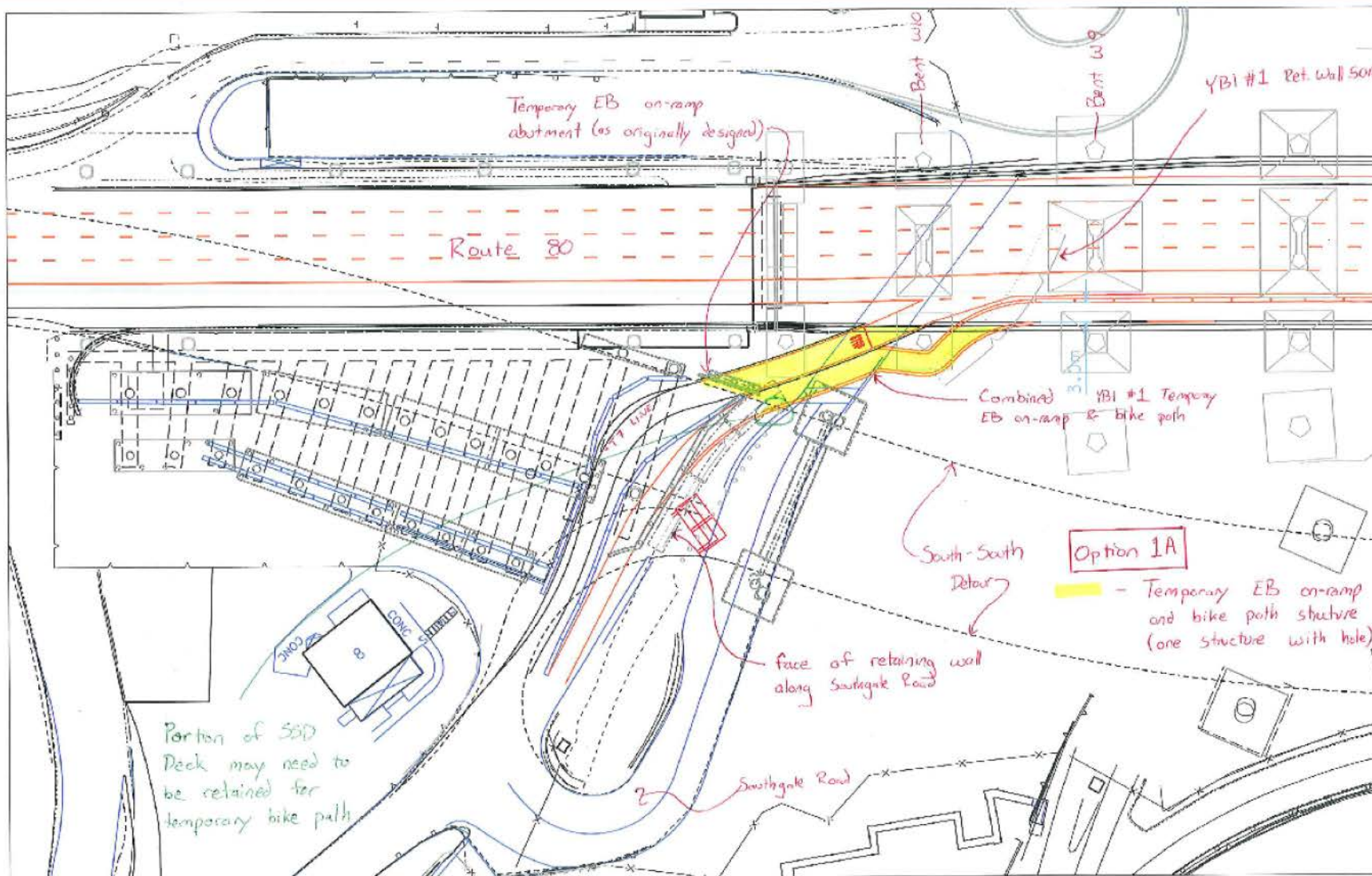
1 of 5



THE SAN FRANCISCO-OAKLAND  
**BAY BRIDGE**  
SEISMIC SAFETY PROJECT

Option 1

CALTRANS BAY AREA TOLL AUTHORITY CALIFORNIA TRANSPORTATION COMMISSION



Temporary YBI Bike Path3.dgn 11/17/2010 2:51:52 PM

2 of 5



THE SAN FRANCISCO-OAKLAND  
**BAY BRIDGE**  
SEISMIC SAFETY PROJECT

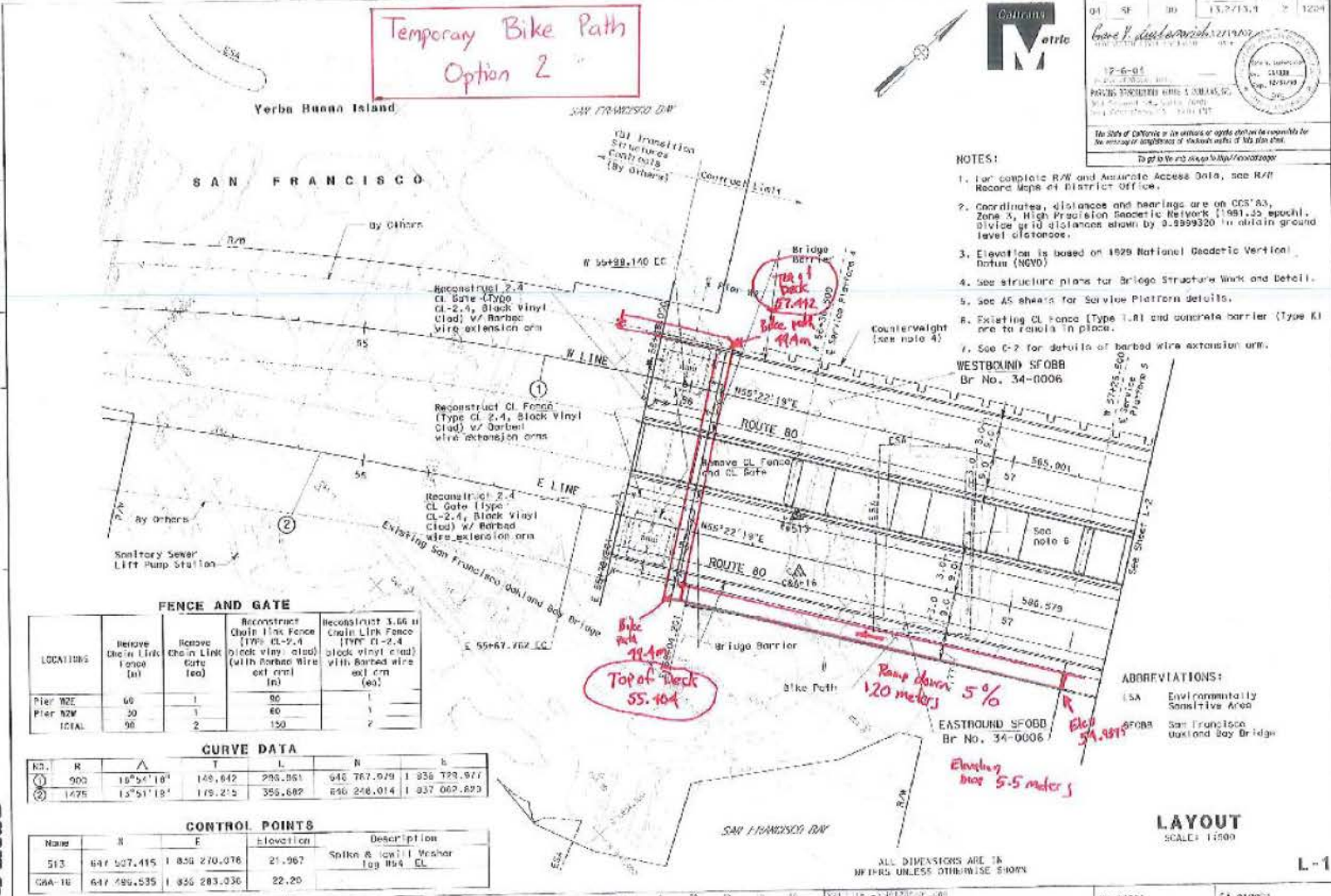
Option 1

CALTRANS BAY AREA TOLL AUTHORITY CALIFORNIA TRANSPORTATION COMMISSION

DATE: 12-6-01  
 CALCULATED BY: [Signature]  
 DESIGNED BY: [Signature]  
 C-CHECKED BY: [Signature]

DESIGN OVERSIGHT  
 BCB ZONE 100'

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
 Caltrans



SAS Temporary Bike Path

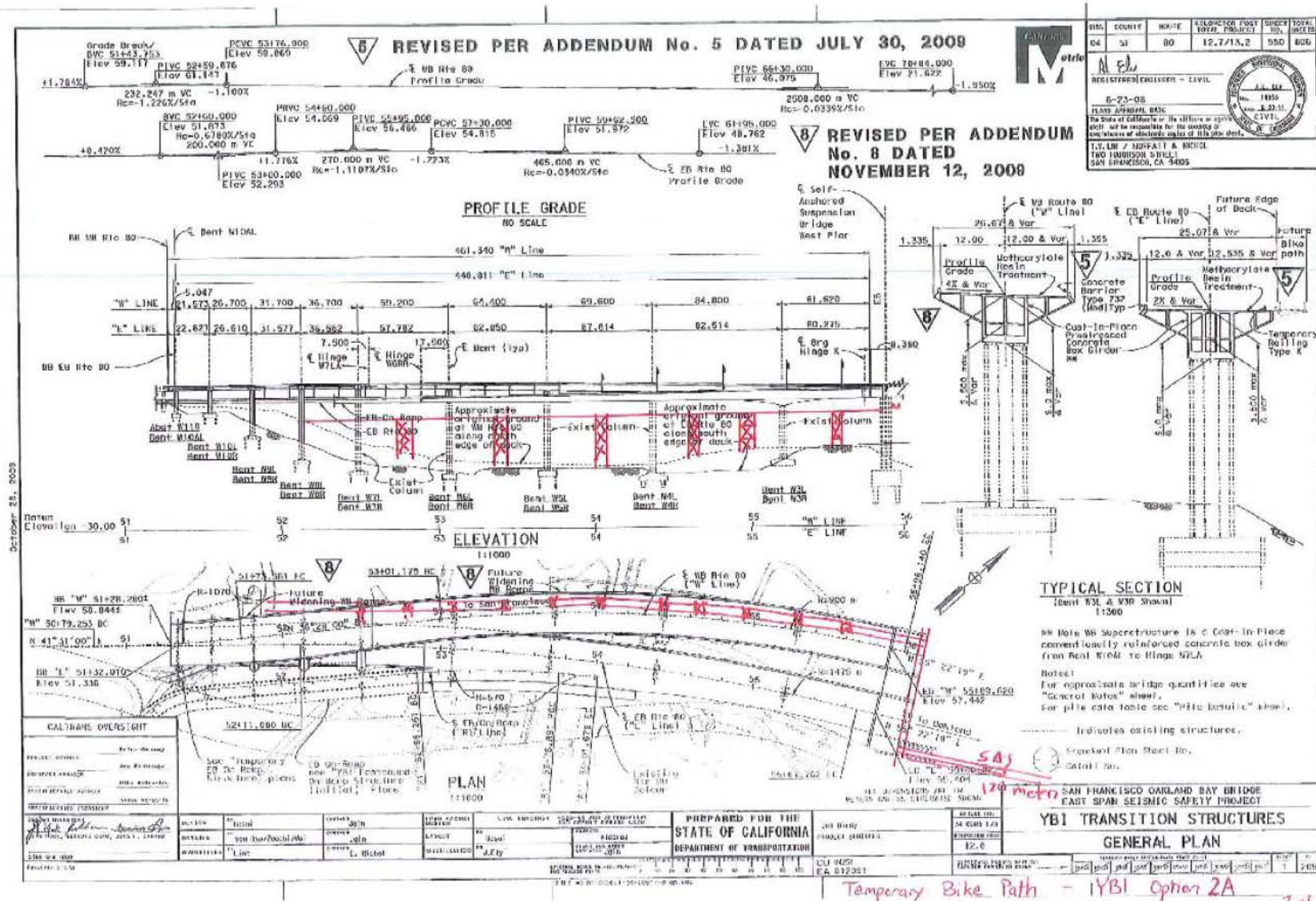
1 of 3



THE SAN FRANCISCO-OAKLAND  
**BAY BRIDGE**  
 SEISMIC SAFETY PROJECT

Option 2

CALTRANS BAY AREA TOLL AUTHORITY CALIFORNIA TRANSPORTATION COMMISSION



THE SAN FRANCISCO-OAKLAND  
**BAY BRIDGE**  
 SEISMIC SAFETY PROJECT

CALTRANS BAY AREA TOLL AUTHORITY CALIFORNIA TRANSPORTATION COMMISSION

Option 2

**TO:** Toll Bridge Program Oversight Committee (TBPOC)      **DATE:** December 1, 2010

**FR:** Jason Weinstein, Senior Program Coordinator, BATA

**RE:** Agenda No. - 5a

Item- Antioch/ Dumbarton Bridge Seismic Retrofit Updates

---

**Recommendation:**

For Information Only

**Cost:**

N/A

**Schedule Impacts:**

N/A

**Discussion:**

Antioch Bridge

The Department is continuing to review submittals for Structural Steel Shop Drawings and Bridge Jacking Plans. Progress in the field continues without disturbing the owls. An update of on-going field work is as follows:

- Suspended platform installation has been completed at 18 of 32 total piers.
- Stair tower installation has been completed at 20 of 31 total piers.
- Drilling for Drill and Bond activity has been completed at 10 of 20 total piers.
- Placing dowels for Pier Concrete Pedestals has been completed at 9 of 20 total piers.
- Coring for Post-tension Bentcap has been completed at 12 of 38 total piers.
- Placing jacking stiffeners has been completed at 3 of 41 total piers.
- Pier 3 is under temporary jacking supports while replacing bearings.

Earthquake Protection Systems (EPS) successfully performed quality control tests on twelve isolation bearings during the week of October 18, 2010. EPS delivered six Type II bearings and two Type 1 bearings from this first batch to the University of California in San Diego (UCSD) for independent assurance testing. Quality Assurance (QA) testing of these bearings was completed on November 4, 2010 and approved November 12, 2010.

## *Memorandum*

EPS performed quality control tests on Ten Type II bearings on November 19, 2010. The First two bearings were installed at Pier 3 week of November 29, 2010.

Trade Winds Steel Group (TWSG), in South Korea, is making progress on the fabrication of the steel column casings. Brooklyn Iron Works (BIW), in Spokane Washington, is making progress on the steel pier cross-bracing members.

### Dumbarton: Bridge:

The Department is reviewing details for construction access platforms submitted by the contractor. An update of on-going field work is as follows:

Storm Water Pollution Prevention Program (SWPPP) measures continue to be installed and maintained. Shimmick has also begun field work with the installation of the piles for the pump station. The west side approach slab structure piles are scheduled to be driven on land during the week of November 29, 2010.

### **Attachment(s):**

N/A

**TO:** Toll Bridge Program Oversight Committee (TBPOC)      **DATE:** December 1, 2010

**FR:** Jason Weinstein, Senior Program Coordinator, BATA

**RE:** Agenda No. - 5b

Item- Antioch/ Dumbarton Bridge Seismic Retrofit Updates  
Antioch Bridge CCO No. 6 (Bearings and Restrainers)

---

**Recommendation:**

**APPROVAL**

**Cost:**

Not to Exceed \$3.7 M

**Schedule Impacts:**

97-day Delay to Critical Path

**Discussion:**

This Contract Change Order is required to facilitate a change in the installation sequence of the seismic isolation bearings and bearing restrainers. Attached for your reference are documents that illustrate the changes to the bearing installation sequence. The contract did not originally call out a specific sequence for the bearing installation; however, after further review by the designers the stability of the structure needs to be maintained with a specific bearing installation sequence (see attachment).

The time impacts to the contractor's schedule for these changes are 67 days for the bearing sequence and 30 days for the restrainer brackets. Time-Related Overhead (TRO) for this contract is \$20,000/day.

In October 2010, staff brought to your attention an outstanding issue with respect to welding at Brooklyn Iron Works (BIW). The Department was put on notice by California Engineering Contractors (CEC) that the fabrication of the column cross-bracing at Antioch is being delayed at BIW due to CCO #7. In October there were 16 days of delay, which the Department owns because of CCO #7. At that time there was concern that further delay could push this issue to the point where the TBPOC would need to be involved because the delay cost would quickly approach \$1 M.

## *Memorandum*

However, due to this required change in the installation sequence of the seismic isolation bearings and installation of bearing restrainers, the delay from CCO #7 and this proposed CCO #6 will be concurrent. CCO #7 should not add further delay to the contract than what will be incurred by CCO #6.

Staff is seeking a not-to-exceed amount for CCO #6 as there are material and labor costs, as well as, some TRO+ (scaffolding, miscellaneous equipment, and jacking systems) that cannot be fully quantified at this time.

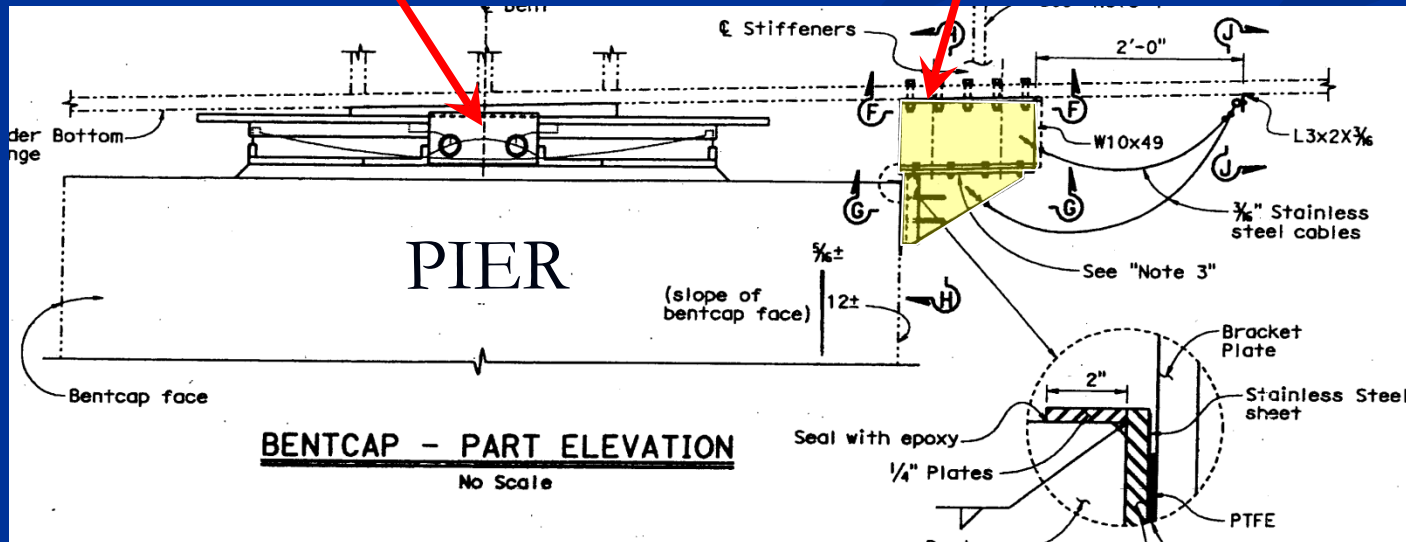
It is important to note that this 97-day delay pushes the work into a 2<sup>nd</sup> winter season and will impact when the temporary road is removed. If the permit constraints were put into the schedule for ground disturbing activities (Oct through April) there would be an additional 2 months of delay. However, there may be ways to mitigate this delay. The not-to-exceed amount of \$3.7 M requested assumes that this delay cannot be mitigated and the project would be suspended after all seismic work is completed. The project would then resume when the permitting window allows for removal of the temporary access road. Staff will update the TBPOC at future meetings on this temporary road removal item.

### **Attachment(s):**

1. Restrainer Bracket Detail
2. Contractor Baseline Bearing Installation Sequence
3. CCO #6 Bearing Installation Sequence
4. Antioch Bridge Seismic Retrofit Contract 04-1A5214, Budget Analysis, September 30, 2010
5. CCO #6 Draft Memorandum
6. CCO #6 Draft CCO

## A photograph of a large concrete arch bridge spanning a body of water. The bridge features a series of vertical hangers supporting the deck. A red arrow points to one of these hangers, highlighting its role in the bridge's structure. The background shows a green landscape with hills and power lines.

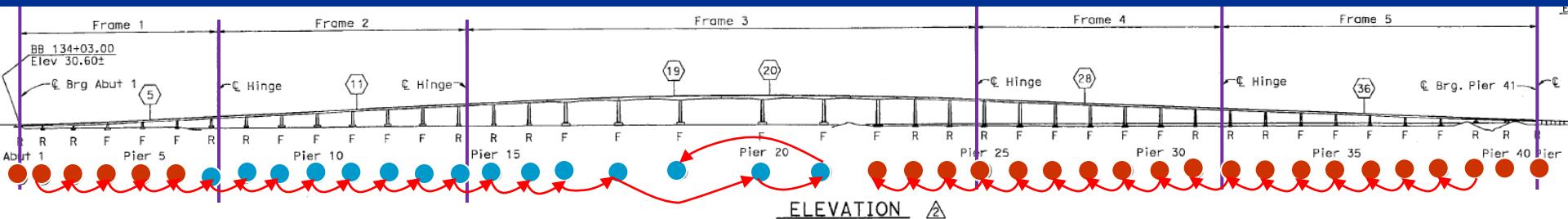
## Restraining Bracket - 6 Locations (Piers 5, 11, 19, 20, 28 & 36)



# Baseline Bearing Installation Sequence

Second movement

First movement



Legend:

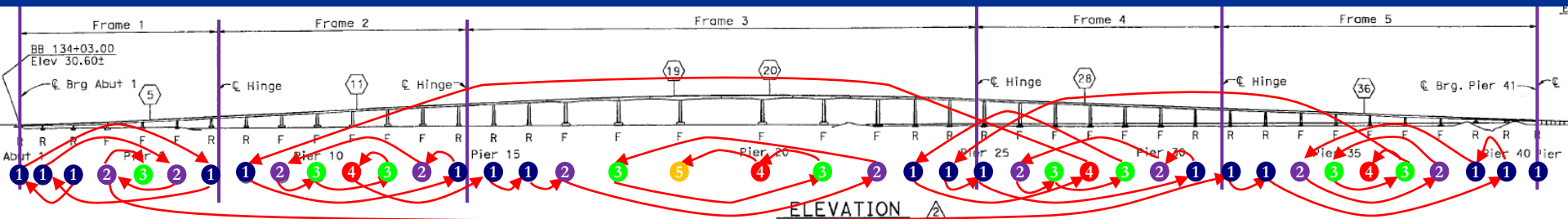
Land Based Piers



Water Based Piers



# CCO 6 Bearing Installation Sequence



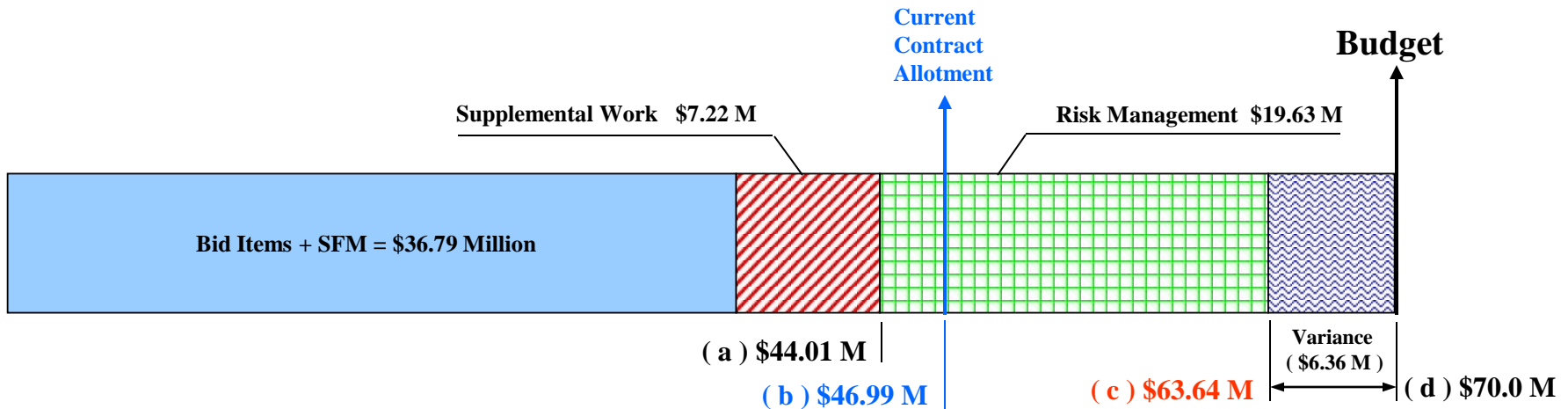
## Legend:

Bearing Installation Sequence  
within each Frame



# Antioch Bridge Seismic Retrofit Contract 04-1A5214

## Budget Analysis September 30, 2010



### Contract 04-1A5214 Antioch Seismic Bridge Retrofit Current Contract Budget Funding Status

September 30, 2010 Basis

Contract Items (plus quantity over runs)	\$	34,926,344	
State Furnished Materials (SFM)	\$	1,868,000	
Subtotal	\$	36,794,344	
Supplemental Work	\$	5,920,000	
Contingency	\$	4,271,656	
Subtotal Original Contract Allotment	\$	46,986,000	
Supplemental Budget Allocation Approved	\$	-	
Subtotal Current Contract Allotment	\$	46,986,000	( b )
Remaining Unallotted Budget (Current Budget Budget - Current Budget Allotment)	\$	23,014,000	
<b>Total Current Contract Budget</b>	<b>\$</b>	<b>70,000,000</b>	<b>( d )</b>
Reported Total Forecast At Completion In 2nd Quarter 2010 TBSRP Report	\$	70,000,000	

### Contract 04-1A5214 Antioch Bridge Seismic Retrofit Contract Forecast At Completion & Variance

September 30, 2010 Basis

Contract Items (plus quantity over runs)	\$	34,926,344	
State Furnished Materials (SFM)	\$	1,868,000	
Subtotal	\$	36,794,344	
Supplemental Work	\$	5,780,000	
CCO's			
CCO's (Approved ( 0 ) + Pending ( 11 ) = Total ( 11 )	\$	1,440,000	
CCO's = or > \$1 Million Pending POC's approval ( 0 )	\$	-	
Subtotal	\$	44,014,344	( a )
Risk Management Cost - Q3 2010 50% Probable	\$	19,629,000	
<b>Q3 2010 Total</b>	<b>\$</b>	<b>63,643,344</b>	<b>( c )</b>
Variance (Total - TBPOC Current Approved Budget)	\$	(6,356,656)	

Confidential Draft – For Deliberative Purpose Only

Quantitative Risk Analysis is ongoing.

**CONTRACT CHANGE ORDER MEMORANDUM**

DATE: 11/30/2010 Page 1 of 2

TO: DOUG COE /		FILE: E.A. 04 - 1A5214		
FROM: WILLIAM HOWE		CO-RTE-PM CC,Sac-160-0.8/1.3,L0.0/L1.3		
FED. NO. NO FED AID				
CCO#: 6	SUPPLEMENT#: 0	Category Code: AXZZ	CONTINGENCY BALANCE (incl. this change) <b>\$273,022.50</b>	
COST: <b>\$3,652,930.00</b>		INCREASE <input checked="" type="checkbox"/> DECREASE <input type="checkbox"/>	HEADQUARTERS APPROVAL REQUIRED? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	
SUPPLEMENTAL FUNDS PROVIDED: <b>\$300,000.00</b>		IS THIS REQUEST IN ACCORDANCE WITH ENVIRONMENTAL DOCUMENTS? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		
CCO DESCRIPTION: Brackets & Sequence of Bearings		PROJECT DESCRIPTION: Bridge Seismic Retrofit		
Original Contract Time: <b>300</b> Day(s)	Time Adj. This Change: <b>97</b> Day(s)	Previously Approved CCO Time Adjustments: <b>0</b> Day(s)	Percentage Time Adjusted: (including this change) <b>32</b> %	Total # of Unreconciled Deferred Time CCO(s): (including this change) <b>0</b>

**THIS CHANGE ORDER PROVIDES FOR:**

Revising the installation sequence of the friction pendulum bearings, fabricate and install six (6) restrainer brackets, and close all related time and cost impacts related to this change.

Contract 04-1A5214 is a seismic retrofit of Antioch Bridge, Br. No. 28-0009. The retrofit consists of replacing the 82 column bearings with friction pendulum isolation bearings, installing cross bracing at pier columns 12 through 31, installing shear-keys at the four hinge locations, and installing column casings on the slab span from pier 41 to abutment 77.

It was recommended by the Seismic Pier Review Committee to install six longitudinal restrainer brackets to prevent the five frames in the superstructure from walking "downhill." It was also necessary to revise the bearing installation sequence to control thermal movements and forces. These changes were not included in an addendum prior to bid opening.

**Time Related Overhead:**

The contractor performed a time impact analysis (TIA 1 rev 3, file name 01T1Rev4) that incorporated the final installation sequence and showed five of the six restrainer brackets were on the critical path and that the new sequence was more restrictive because of crew and resource limitations than the original sequence. The Department performed an analysis of that TIA and concluded that there were 67 days of delay related to the new bearing installation sequence and 30 days of delay related to the installation of the restrainer brackets. The contractor and the Department have reached agreement on the duration of the delay.

The time related overhead costs associated with these 97 days of delay are \$1,940,000.00.

**Direct Costs:**

The contractor has submitted costs for the fabrication and installation of the restrainer brackets totaling \$344,100.

**Indirect Costs:**

Granting 97 days to extend the contract moves the completion date to 02-08-12. Additional indirect costs will include costs for SWPPP, bird monitoring and exclusion measures, access platforms, scaffolding, cranes, forklifts, generators, compressors and marine equipment. It is estimated that the cost of these items will be \$1,068,830. This estimate assumes that the additional bird monitoring and exclusion measures will mitigate any additional bird related delay.

Ground disturbing activities are prohibited between May 1 and September 30. This means that - barring an exception to the permit requirement - temporary road removal would run from May 1 to approximately June 1, 2012. Extending the contract to the end of the temporary road removal would add another 76 days of TRO. It is therefore recommended that work be suspended after 02-08-12 and to demobilize and then remobilize starting 05-01-12 to complete the temporary road removal. This cost is estimated to be approximately \$300,000.

**Cost summary:**

TRO: \$1,940,000

Direct Costs: \$344,100

Indirect costs: \$1,368,830

Total: \$3,652,930 say not to exceed \$3,700,000

A time extension of 97 days is warranted for this change.

**CONTRACT CHANGE ORDER MEMORANDUM**

EA: 1A5214 CCO: 6 - 0

DATE: 11/30/2010 Page 2 of 2

Time impact analysis and cost estimates are on file.

This contract change order will resolve all schedule impacts, weekly statements, direct and indirect costs related to this change.

Project Manager Mo Pazooki concurs with this change.

Maintenance concurrence was obtained from the Office of Structure Maintenance for the restrainer bracket installation and no further maintenance concurrence is required because the rest of the change is administrative in nature.

CONCURRED BY:			ESTIMATE OF COST		
Construction Engineer:	William Howe	Date 11/30/10		THIS REQUEST	TOTAL TO DATE
Bridge Engineer:	David Tenorio	Date 11/30/10	ITEMS	\$0.00	\$0.00
Project Engineer:		Date	FORCE ACCOUNT	\$0.00	\$0.00
Project Manager:	Mo Pazooki	Date 11/30/10	AGREED PRICE	\$3,652,930.00	\$3,652,930.00
FHWA Rep.:		Date	ADJUSTMENT	\$0.00	\$0.00
Environmental:		Date	<b>TOTAL</b>	<b>\$3,652,930.00</b>	<b>\$3,652,930.00</b>
Other (specify):		Date	<b>FEDERAL PARTICIPATION</b>		
Other (specify):		Date	<input type="checkbox"/> PARTICIPATING <input type="checkbox"/> PARTICIPATING IN PART <input checked="" type="checkbox"/> NONE <input type="checkbox"/> NON-PARTICIPATING (MAINTENANCE) <input type="checkbox"/> NON-PARTICIPATING		
District Prior Approval By:		Date	FEDERAL SEGREGATION (if more than one Funding Source or P.I.P. type)		
HQ (Issue Approve) By:		Date	<input type="checkbox"/> CCO FUNDED PER CONTRACT <input type="checkbox"/> CCO FUNDED AS FOLLOWS		
Resident Engineer's Signature:		Date	FEDERAL FUNDING SOURCE    PERCENT _____ _____ _____		

**CONTRACT CHANGE ORDER**

Change Requested by: Engineer

CCO 6	Suppl. No. 0	Contract No. 04 - 1A5214	Road CC,Sac-160- 0.8/1.3,L0.0/L1.3	FED. AID LOC.: NO FED AID
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**To: CALIFORNIA ENGINEERING CONTRACTORS INC**

You are directed to make the following changes from the plans and specifications or do the following described work not included in the plans and specifications for this contract. **NOTE: This change order is not effective until approved by the Engineer.**

Description of work to be done, estimate of quantities and prices to be paid. (Segregate between additional work at contract price, agreed price and force account.) Unless otherwise stated, rates for rental of equipment cover only such time as equipment is actually used and no allowance will be made for idle time. This last percentage shown is the net accumulated increase or decrease from the original quantity in the Engineer's Estimate.

**Extra Work at Lump Sum:**

Revise the bearing installation sequence and fabricate and install restrainer brackets as shown on sheets 2-5 of this change order.

Adjustment of compensation at Agreed Lump Sum:

For this change, the contractor shall receive an agreed lump of \$1,712,930.00. This agreed lump sum constitutes full compensation, including all mark-ups, and no additional compensation will be made therefore.

Adjustment of compensation at Item Price:

Item 5 Time Related Overhead:

97 days x \$20,000.00 per day (Increase 32.33%) = \$1,940,000

This change order resolves TIA No. 1 and all project time impacts prior to 11-24-10, and includes both direct and indirect costs related to the work of this change and no additional compensation will be allowed therefore.

Estimated cost of Extra Work at Lump Sum .....\$3,652,930.00

Estimated Cost: Increase ☒ Decrease ☐ **\$3,652,930.00**

By reason of this order the time of completion will be adjusted as follows: 97 days

Submitted by

Signature	Resident Engineer William Howe	Date
-----------	-----------------------------------	------

Approval Recommended by

Signature	Construction Engineer William Howe	Date
-----------	---------------------------------------	------

Engineer Approval by

Signature	Construction Manager Douglas Coe	Date
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We the undersigned contractor, have given careful consideration to the change proposed and agree, if this proposal is approved, that we will provide all equipment, furnish the materials, except as may otherwise be noted above, and perform all services necessary for the work above specified, and will accept as full payment therefor the prices shown above.

**NOTE: If you, the contractor, do not sign acceptance of this order, your attention is directed to the requirements of the specifications as to proceeding with the ordered work and filing a written protest within the time therein specified.**

Contractor Acceptance by

Signature	(Print name and title)	Date
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## **ITEM 6: OTHER BUSINESS**

No Attachments